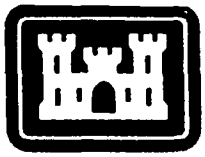

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Report Number: COELMN/PD-94/03

U.S. Army Corps
of Engineers
New Orleans District

CULTURAL RESOURCES SURVEY OF PALMETTO AND COOCHIE REVETMENTS, MISSISSIPPI RIVER M-326 TO 315

November 1993

FINAL REPORT

R. Christopher Goodwin & Associates, Inc.
5824 Plauche Street
New Orleans, LA 70123

PREPARED FOR:

U.S. Army Corps of Engineers
New Orleans District
P.O. Box 60267
New Orleans, LA 70160-0267

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Mississippi River
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Pandella Plantation
Peach Orchard Plantation
Wilkinson County, Mississippi
Withlacoochie Plantation

19. ABSTRACT (*Continue on reverse if necessary and identify by block number*)

This report presents the results of archeological survey and testing of the planned Palmetto and Coochie Revetment extensions, in Adams County, Mississippi, and Concordia Parish, Louisiana. Fieldwork was conducted in April 1992 by R. Christopher Goodwin & Associates, Inc., for the U.S. Army Corps of Engineers, New Orleans District. Fieldwork consisted of a preliminary reconnaissance followed by systematic testing within the two areas. Based on data collected during the reconnaissance, the post-1918 upriver portion of each area was not tested systematically. The 17 ac downriver portion of the Palmetto Revetment project area was tested through systematic excavation of 102 shovel tests. The downriver 16.5 ac portion of the Coochie Revetment project area was examined through the systematic excavation of 52 auger tests. No archeological remains or historic standing structures were located within the two project areas; no additional archeological testing was recommended.

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DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT CORPS OF ENGINEERS
P O BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO
ATTENTION OF

November 8, 1993

Planning Division
Environmental Analysis Branch

To The Reader:

This cultural resource effort was designed, funded, and guided by the U.S. Army Corps of Engineers, New Orleans District, as part of our cultural resource management program. The report documents the results of a combined cultural resource survey and testing of two revetment extensions in Concordia Parish, Louisiana, and Adams County Mississippi.

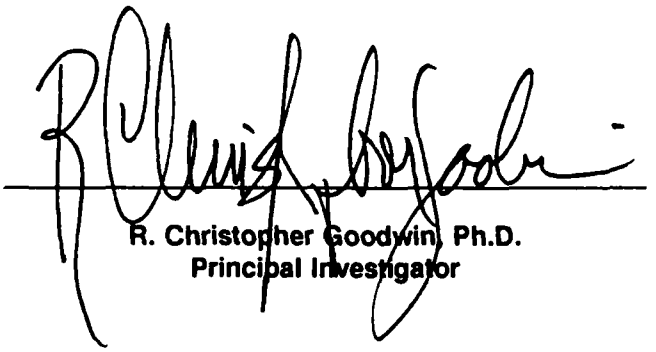
We concur with the authors' recommendations regarding site significance and National Register of Historic Places eligibility. Through consultation with the Louisiana and Mississippi State Historic Preservation Officers, we have determined that the project will not affect cultural resources.

Howard R. Bush
Howard R. Bush
Authorized Representative
of the Contracting Officer

R. H. Schroeder, Jr.
R. H. Schroeder, Jr.
Chief, Planning Division

CULTURAL RESOURCES SURVEY OF PALMETTO AND COOCHIE REVETMENTS, MISSISSIPPI RIVER M-326 TO 315

FINAL REPORT



R. Christopher Goodwin, Ph.D.
Principal Investigator

By

Stephen Hinks, Paul V. Heinrich,
Susan Barrett Smith, and William P. Athens

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November 1993

For

U.S. Army Corps of Engineers
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At R. Christopher Goodwin & Associates, Inc., William P. Athens served as Project Manager. Stephen Hinks and Bradley Mueller directed field investigations, while archeological assistants included Ann Ballard, Jeremy Horowitz, Science Kilner, and Luis Williams. Susan Barrett Smith undertook the historical research and title search for the project. David Courington and Shirley Rambeau prepared the graphic materials for inclusion in this report. The report was produced by Christine Herman and Ann Fleetwood.

CHAPTER I

INTRODUCTION

This report presents the results of Phase I/II cultural resources investigations of the Palmetto and Coochie Revetment project items, Adams and Wilkinson counties, Mississippi, and Concordia Parish, Louisiana. The entire project area incorporates both sides of the Mississippi River, between River Miles 326 to 315; archeological survey was completed at two areas, the Palmetto and Coochie Revetment project items (Figure 1). Archeological survey was conducted in April 1992 by R. Christopher Goodwin & Associates, Inc., for the U.S. Army Corps of Engineers, New Orleans District, pursuant to Delivery Order 09 of Contract DACW29-90-D-0018. This project was undertaken in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended.

The Palmetto Revetment project item lies on the east (left descending) bank of the Mississippi River, between River Miles 326.1 and 324.5-L, in Adams County, Mississippi (Figures 1 and 2). The revetment is designed to inhibit riverine cutting at the bend. The original Palmetto Revetment measured 4,892 m (16,050 ft) in length; it was constructed in 1955. Since then, the revetment has been extended seven times, resulting in a total length of 9,407 m (30,864 ft) (U.S. Army Corps of Engineers 1987:1-2). The planned Palmetto Revetment project item is designed to extend the revetment upriver between Ranges U-190 and U-110 (Figure 2). The current project item measures approximately 2,835 m (9,300 ft) in length; it encompasses 85 ac.

The Coochie Revetment project item is located on the west (right descending) bank of the Mississippi River, between River Miles 319.3 and 318.3-R, in Concordia Parish, Louisiana (Figures 1 and 3). The revetment is designed to prevent additional riverine cutting at the bend and to preserve the integrity of the existing artificial levee. The original Coochie Revetment measures 4,438 m (14,560 ft) in length; it was constructed in 1954. Two revetment extensions have extended the revetment to its current length of 5,227 m (17,150 ft) (U.S. Army Corps of Engineers 1987:3-4). The planned revetment extension is designed to extend the revetment upriver between Ranges U-100 and U-50. The Coochie Revetment project item measures approximately 1,524 m (5,000 ft) in length; it covers 46 ac.

Each project corridor measures 122 m (400 ft) in width and extends parallel and adjacent to the Mississippi River. Field investigations were designed to identify and evaluate all archeological sites and pre-1945 historic standing structures located within the two project items. Archival research focused on reconstructing the historic settlement in the project reach and included the development of basic land tenure histories for the two project items.

Fieldwork included a preliminary reconnaissance survey of both project items. Based on collected data, the upriver portion of each item was eliminated from additional archeological testing because of the recency of the landform. The downriver portion of the Palmetto Revetment project item was assessed through systematic shovel testing; a total of 102 shovel tests were excavated within this 17 ac survey area. The downriver portion of the Coochie Revetment project item was surveyed through systematic auger testing; a total of 52 auger tests were excavated within this 16.5 ac survey area. No archeological sites or historic standing structures were identified within either of the two project items.

Organization of the Report

The natural setting of the project area is described in Chapter II. This chapter includes a discussion of historic bankline change throughout the project reach and the affect these changes have had on the two

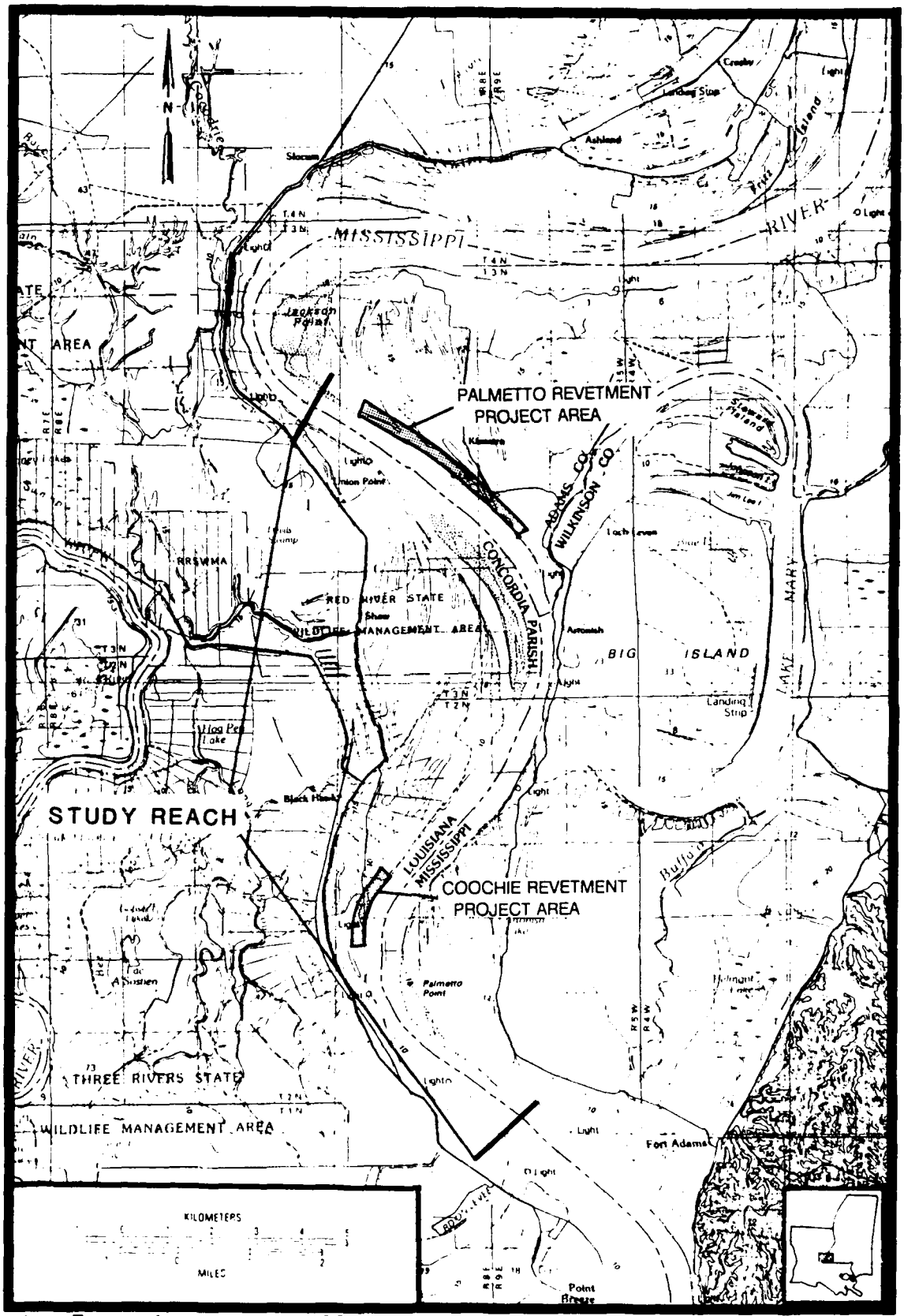


Figure 1. Excerpt from the 1991 USGS 30 x 60 minute series topographic quadrangle, Woodville, Mississippi - Louisiana, showing the location of the study reach, and the Palmetto and Coochie Revetment project areas.

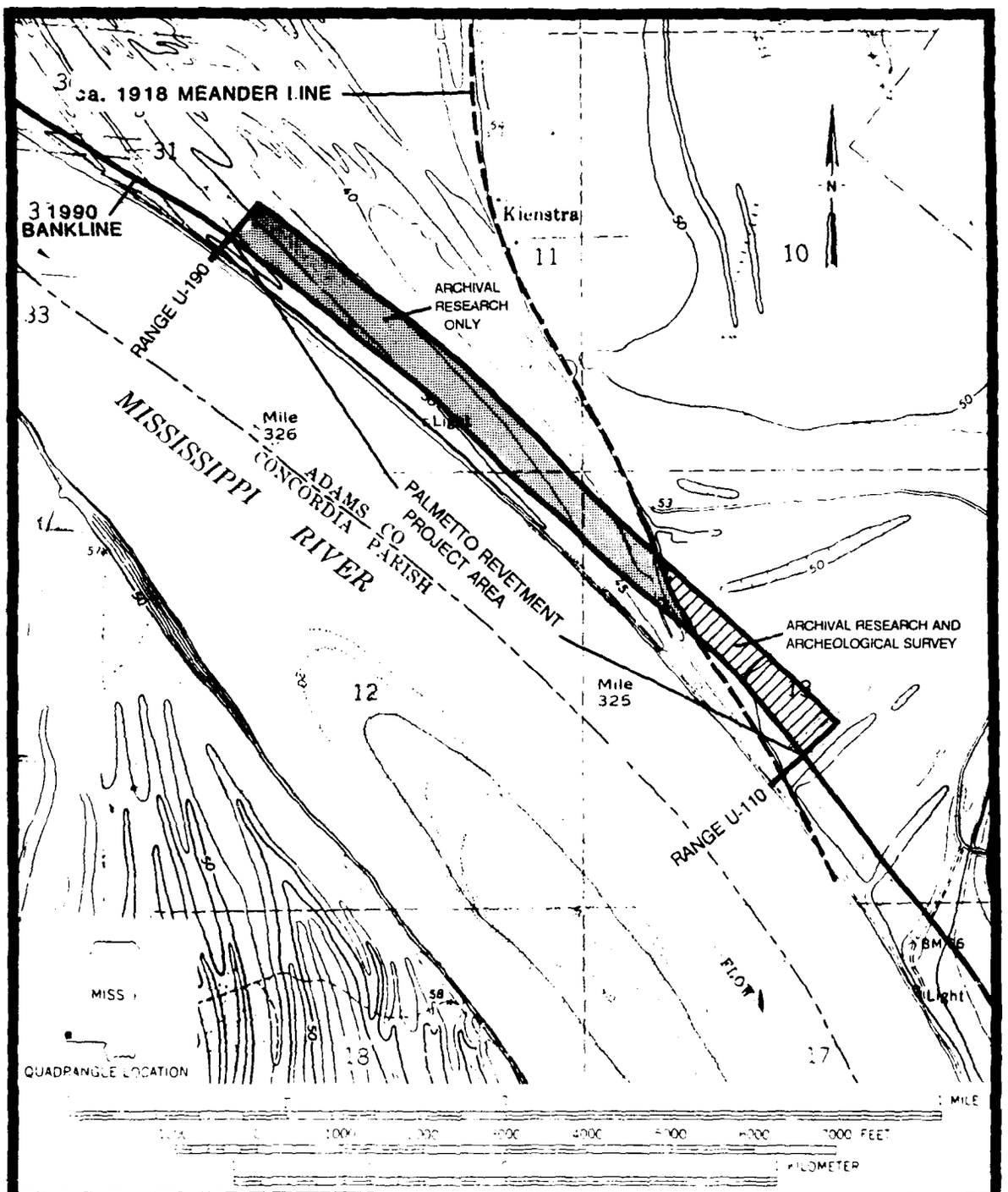


Figure 2. Excerpt from the USGS 7.5 minute series 1965 Lake Mary, Mississippi - Louisiana topographic quadrangle, showing the Palmetto Revetment project area.

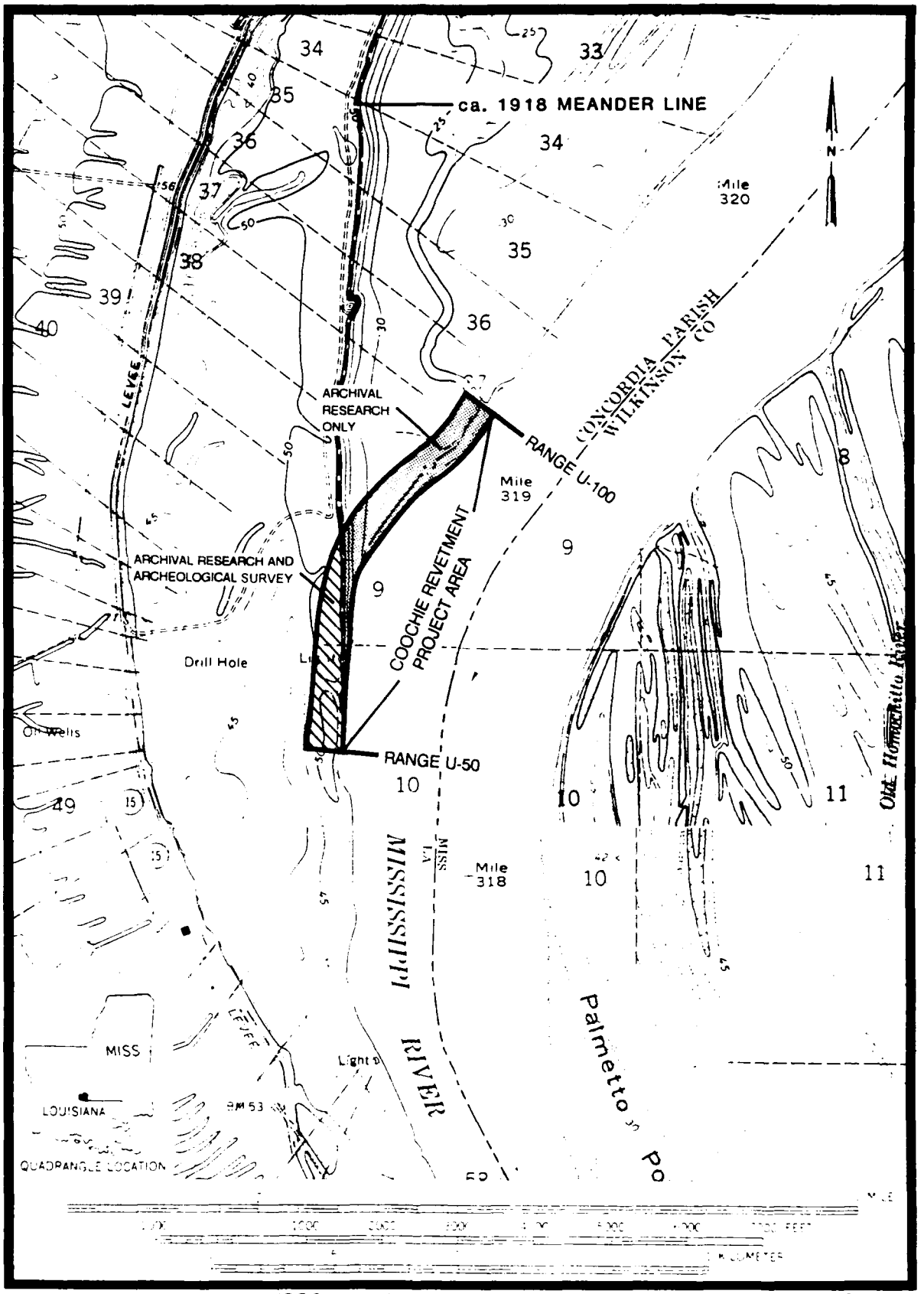


Figure 3. Excerpts from the USGS 7.5 minute series 1965 (photoinspected 1972) Lower Sunk Lake, Louisiana - Mississippi; the 1965 Lake Mary, Mississippi - Louisiana; the 1965 Turnbull Island, Louisiana - Mississippi; and, the 1965 Fort Adams, Mississippi - Louisiana topographic quadrangles, showing the Coochie Revetment project area.

project items. Chapter III presents an overview of the prehistoric setting of the region. Previous archeological investigations in the vicinity of the project area are contained in Chapter IV. This chapter also includes a discussion of anticipated submerged marine resources within the vicinity of the project reach. The historic development of the project reach is presented in Chapter V; this chapter includes a review of land tenure throughout the two project items. Field methods utilized during survey are described in Chapter VI. Results of the field investigations, as well as a summary and management recommendations, are presented in Chapter VII. The Scope of Services is included in Appendix I.

CHAPTER II

NATURAL SETTING

This chapter reviews the relationship between the occurrence of archeological deposits and the geomorphology of the Mississippi River Alluvial Valley within the Palmetto and Coochie Revetment project items. This research provides information that can be used to assess the potential for encountering buried archeological sites within the landforms found in association with the project reach.

Physiography

The project reach lies entirely within the modern meander belt; it has been designated as "Meander Belt No. 1" (Autin et al. 1991). Like other meander belts, Meander Belt No. 1 is a constructional geomorphic surface composed of fluvial landforms created by the meandering of the Mississippi River while occupying a single course (Saucier 1974:10-11). The assemblage of constructional fluvial landforms that characterize the surface of the belt consists of point bars, natural levees, crevasses, and abandoned meander loops (Saucier 1969).

Within the project reach and the adjacent meander belt, protohistoric to modern ridge and swale topography forms the surface of Meander Belt No. 1. This ridge and swale topography consists of well-defined, arcuate ridges and swales formed by the lateral accretion of point bars by the Mississippi River. These ridges typically range in elevation from 14 to 16 m (46 to 52 ft) above sea level. Rare, permanent lakes called "sloughs" occupy either large swales or abandoned chutes. Within this stretch of Meander Belt No. 1, narrow, modern natural levees have aggraded upon the ridges situated adjacent to the bank of the Mississippi River, *e.g.*, at Union Point. These natural levees measure approximately 100 to 300 m (328 to 984 ft) in width and rise to elevations of 16 to 17.5 m (52.5 to 57.4 ft) above sea level (Saucier 1969; U.S. Geological Survey 1965a, 1965b).

That portion of Meander Belt No. 1 contained within the project reach exhibits very few abandoned meander loops (Figure 4). These abandoned meander loops are in various stages of filling that range from open water, e.g., oxbow lakes, to almost completely filled channels occupied by swamps. The most prominent abandoned channel segment within the project region has been called both "Old River Lake" and "Lake Mary." Lake Mary was formed in 1776 by the Homochitto neck cut-off. Because of its recent creation, a large oxbow lake still occupies this abandoned meander loop, although the ends of its channel adjacent to the Mississippi River have been filled completely by small lacustrine deltas (Fisk 1944:Sheet 13; Gagliano and Howard 1984:150; Saucier 1969).

Well-developed natural levees flank only the western margin of this stretch of Meander Belt No. 1 and the abandoned meander loop containing Lake Mary within it. These natural levees typically range in width from 0.75 to 1.5 km (0.46 to 0.92 km) and have a maximum width of 2 km (1.2 mi). Adjacent to the project reach, the crests of the natural levees rise a little over 15 to 16.5 m (49 to 54 ft) above sea level. Aerial photography clearly shows relict crevasse channels. Grand Bayou Cutoff is a major crevasse distributary that extends from one of these natural levees into the adjacent backswamp (Saucier 1969; U.S. Geological Survey 1965a, 1965b).

The stretch of Meander Belt No. 1 contained within the project reach ranges in width from 9 to 6 km (5.5 to 3.6 mi). To the south, this meander belt narrows to a width of 4.5 km (2.7 mi) in the vicinity of the South Outflow Channel and widens considerably south of the channel. North of Lake Mary, Meander

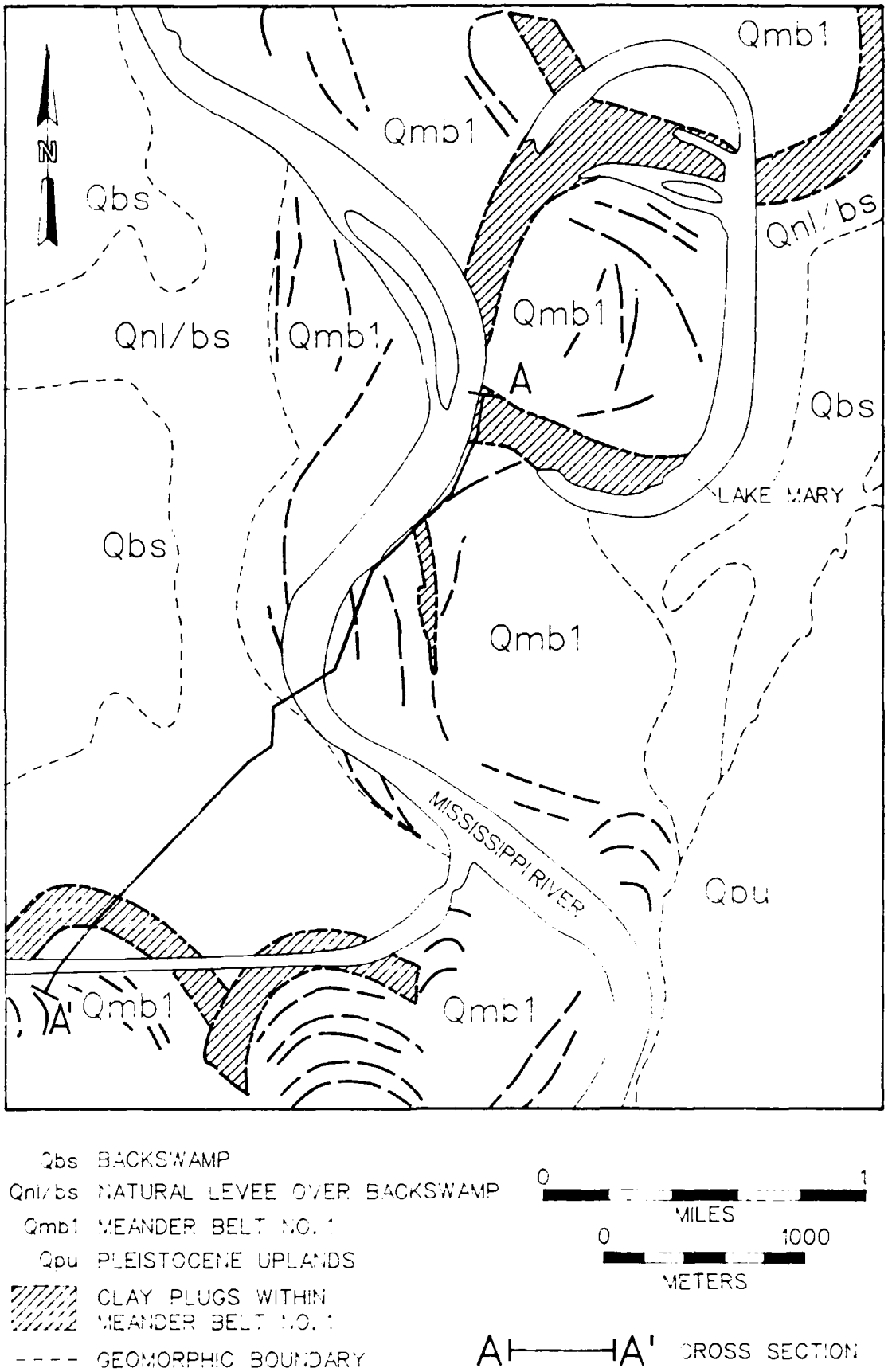


Figure 4. Geomorphic map of the Coochie and Palmetto Revetment project items. Modified from Saucier (1969).

Belt No. 1 is greater than twice the width of the stretch containing both project items (Figure 4) (Saucier 1969).

On either side of the stretch of Meander Belt No. 1 containing the project reach, backswamp comprises the Mississippi Alluvial Plain. The backswamp is that part of the flood plain that consists of swamp, lakes, or combination of both. The backswamp consists of environments that range from infrequently flooded forested bottomlands to permanent swamps and lakes. Long and narrow natural levee systems of crevasses, called "crevasse distributaries," often extend a significant distance into the backswamp from the main natural levee of the meander belt (Saucier 1969, 1974:11-12)

Geomorphology

Meander Belt No. 1 and the other meander belts described by Autin et al. (1991) and Saucier and Snead (1989) are geomorphic surfaces that represent the upper surfaces of unnamed allostratigraphic units, informally called fluvial complexes. These stratigraphic units are defined and mapped by regionally persistent and mappable bounding discontinuities (North American Commission on Stratigraphic Nomenclature 1983:865-866). The sides of this and other fluvial complexes consist of buried erosional scarps formed by the cutbanks of the outermost channels of the meander belt (Figure 5). An erosional unconformity comprises the bottom of a fluvial complex. This occurs when the underlying sediments are cut back and forth across the alluvial plain by the migration of the river channel (Autin 1992).

The fluvial complex consists of a thick package of meandering river deposits (Figure 5). Ridge and swale topography of this meander belt is the surface expression of a thick depositional sequence of fluvial deposits, which consist of 1.5 to 7 m (5 to 23 ft) of natural levee deposits overlying 33 to 37 m (100 to 120 ft) of point bar deposits. The sediments comprising the natural levees are thickest immediately adjacent to the modern and abandoned channels and decrease in thickness away from it. These sediments typically consist of stiff to very stiff, mottled brown to grayish brown, silts, silt loams, silty clays, and clays. Point bar deposits consist of silty sands and silts that grade downward into clean sands and gravels. Over 33 m (100 ft) of uniformly dark gray or bluish-gray, soft, underconsolidated, organically-rich clays and silts typically fill abandoned channels within this stretch of Meander Belt No. 1. Saucier (1969) has summarized the appearance, depositional environment, occurrence, character, and sediments of this stretch of Meander Belt No. 1 and its associated fluvial complex (Figure 5) (Saucier 1969).

Adjacent to this stretch of Meander Belt No. 1, the surfaces of the backswamp are underlain by about 15 to 17 m (49 to 56 m) of fine grained, often organically-rich sediments (Figure 5). These sediments consist of soft to stiff dark to light gray clays, which contain abundant wood fragments and beds of peat. These backswamp deposits overlie fluvial sands, gravelly sands, and gravels of Late Wisconsinan age. Although presumed to be the unmodified surface of a Late Wisconsinan braidplain, the true nature of the contact between the backswamp and fluvial sediments is unknown at this time. Floodwaters have incrementally deposited these backswamp deposits during most of the Holocene (Saucier 1969, 1974:8-9; Saucier and Snead 1989).

Soils

Distinct relationships exist between meander belt landforms and the soil series present within Meander Belt No. 1. Modern and historic point bars typically are characterized by the Commerce-Bruin-Newellton Soil Association. The natural levee bordering the west edge of Meander Belt No. 1 and covering the adjacent backswamp has the Commerce-Bruin Soil Association developed within the crest of the natural levee and the Sharkey-Alligator-Tensas Soil Association developed within its intermediate and

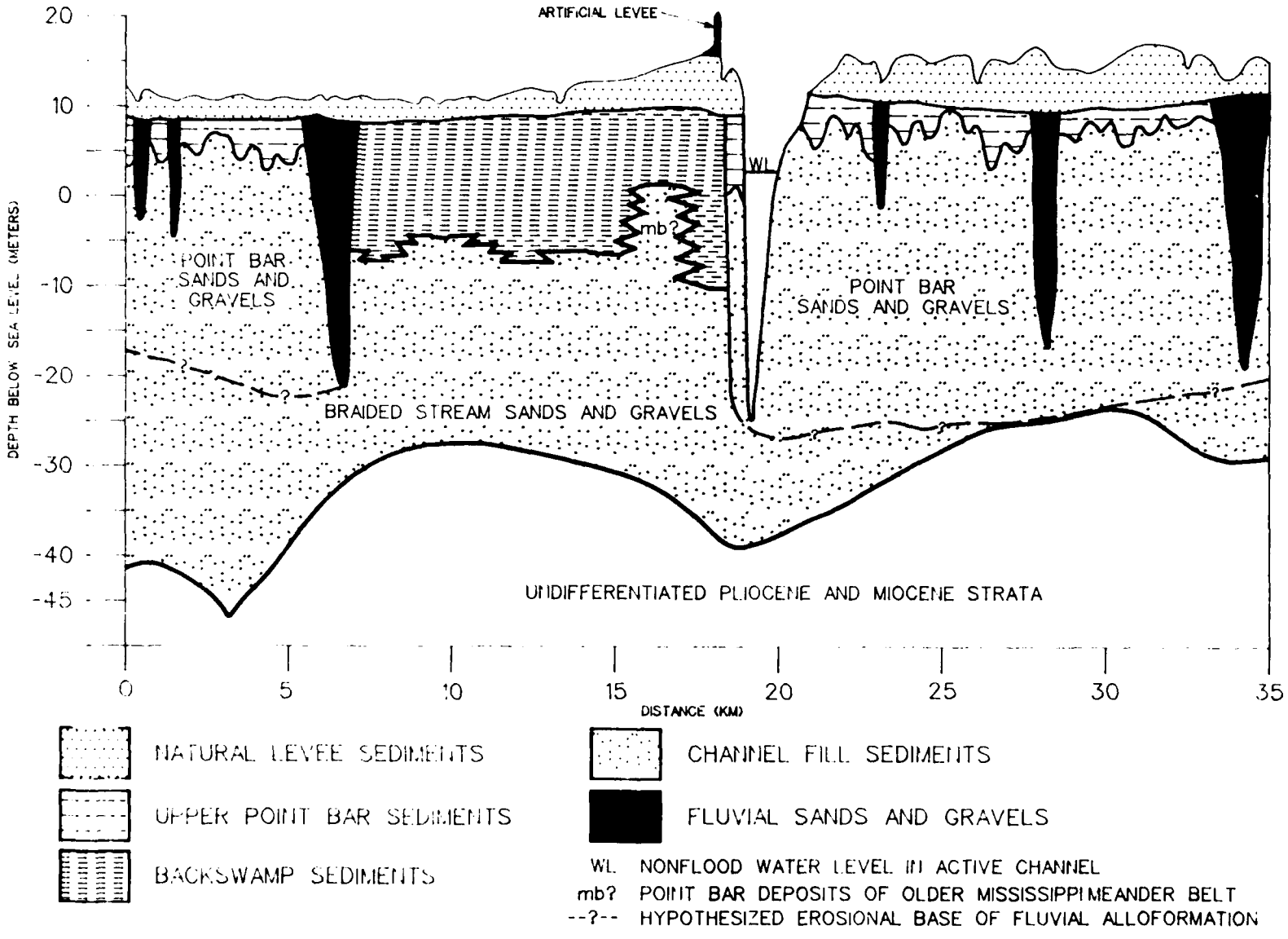


Figure 5. **Geological cross-section of Mississippi River deposits across the Palmetto and Coochie Revetment project items. Modified from Saucier (1969).**

lower slopes. The adjacent backswamp is characterized by the Sharkey-Fausse Soil Association (Martin 1988).

The project items consist entirely of the ridge and swale deposits of historic to modern age point bars in which the soils of the Commerce-Bruin-Newellton Soil Association have developed. Crevasse fine sand is characteristic of the edge of point bars and towheads along the Mississippi River. Crevasse fine sand is a neutral, excessively drained, but frequently flooded entisol developed within recently deposited alluvial sands (Martin 1988).

Commerce and Bruin soils characterize the exterior perimeter of the historic point bars that encompass both project items. The Bruin series occupies the crests of point bar ridges. The Bruin series is a slightly acid to mildly alkaline, moderately well-drained, inceptisol. Typically, its sola are 46 to 102 cm thick and consist of an A-Bw-BC horizon sequence with either a silt loam surface layer and a fine sandy loam subsurface layer. The Commerce series has developed within the swales between these ridges. The Commerce series is a medium acid to moderately alkaline, somewhat poorly drained entisol. Typically, its sola are 51 to 102 cm thick and consist of an A-B-BC horizon sequence with either a silt loam or silty clay loam surface layer and a fine sandy loam subsurface layer (Martin 1988).

Newellton and Sharkey soils characterize the interior of the historic point bars, except for the crests of some of the more prominent ridges mapped as the Bruin series. The Newellton series characterizes the narrow ridges of the interior of point bars. The Newellton series is a medium acid to mildly alkaline, somewhat poorly drained entisol. Typically, its sola are 25 to 51 cm thick and consist of an A-B horizon sequence with either a clay or silty clay loam surface layer and a silt loam grading downward into a fine sandy loam subsurface layer. The Sharkey series typically has developed within the associated swales, filled channels, and broad flats. The Sharkey series is a neutral to mildly alkaline, very poorly drained inceptisol. Typically, its sola are 91 to 152 cm thick and consist of an A-B-Bg-BCg-Cg horizon sequence with a clay surface layer and either a clay or silty clay subsurface layer (Martin 1988).

Sedimentary Processes

A considerable amount of literature has been published concerning the formation of meander belt landforms and the deposition of the sedimentary facies that form them. It is beyond the scope of this chapter to provide a comprehensive review of the fluvial processes responsible for forming and modifying a meander belt and its associated deposits. Rather, Walker and Cant (1984) and Flores et al. (1985) provide for comprehensive reviews of the sedimentologic and geomorphologic processes that form meander belts, braidplains, and the sedimentary deposits associated with them. Also, Fisk (1947), Gagliano and Howard (1984), and Farrell (1989) provide explanations of the fluvial processes important in the formation of meander belts and their associated sediments, e.g., chute and neck cut-offs, lateral accretion, and formation of natural levees by the Mississippi River. Finally, Coleman (1966) and Farrell (1989) provide detailed studies of the depositional processes, landforms, and associated sediments of typical backswamps.

Lateral migration of the Mississippi River channel, concurrent with point bar formation, is the dominant process responsible for the creation of the meander belt within the project items. The active erosion of the concave bank, called the "cutbank" of the river channel causes lateral migration to occur. This erosion causes the cutbank to become oversteepened and to cave into the river because of undercutting by scouring at its base within the river channel. The caving of the cutbank causes the river channel to shift from its former position. The channel of the Mississippi River easily undercuts its cutbanks, because easily eroded sandy point bar and braided stream deposits underlie the adjacent portions of the Mississippi River alluvial plain. As a result, this channel has migrated laterally across the project area at relatively rapid rates within the immediate region. Eventually, the deposition of sand and silt will shift the opposite convex bank, called the point bar, into the river channel after the cutbank has moved. As lateral

migration occurs, the bends of the channel enlarge and form a meander loop. This meander loop eventually will become "cut off" from the river as its upstream and downstream arms coalesce at the neck of the loop (Fisk 1944, 1947:10).

After the surface of the point bar is formed, overbank sediments quickly bury it. Sediment-laden waters overflowing the banks of the Mississippi River during floods deposit these sediments on the floodplain outside its banks. Because these sediments accumulate on the floodplain outside, hence "over" the banks of the Mississippi River, they are called "overbank" sediments. Upon overflowing the banks of the Mississippi River, the floodwaters spread out across its floodplain. Because the floodwaters are no longer confined by channel banks and, perhaps, due to the baffling effect of floodplain vegetation, their velocity abruptly decreases. As a result, the sediment suspended within the waters rapidly settles out. Sand and silt settle near the channel margin, while the fine silt and clay settle further away within the backswamp between river channels. During a flood, the net result is the rapid accumulation of sediment along the channel margin creating a stable ridge, called a natural levee, and the slow, periodic accumulation of fine-grained sediments within the backswamp of the adjacent floodplain (Galloway and Hobday 1983:53-54).

Geologic History

The Mississippi Alluvial Valley and Meander Belt No. 1, which includes the two project items, are the products of fluvial processes in operation for at least the last 1.8 million years. Fluvial terraces found along the tributaries of the Mississippi River in uplands of western Tennessee clearly demonstrate that the present drainage pattern was established by at least the Early Pleistocene. During the Pleistocene, eustatic changes in sea level and periodic influxes of glacial meltwater and sediments caused the Mississippi River to repeatedly entrench and aggrade its alluvial plain. Because the entrenched valley has shifted laterally with each period of entrenchment, the Mississippi River Alluvial Valley has widened significantly with time, and in most areas, it is as wide as it has ever been. Also, with each period of entrenchment, the Mississippi River Valley has cut deeper relative to the surrounding uplands (Autin et al. 1991:554-555).

Wisconsinan Stage

During the Wisconsinan Stage, 35,000 to 10,000 radiometric years Before Present (B.P.), continental glaciation caused sea level to fluctuate by several tens of meters below modern levels. The lowest stand of sea level occurred between approximately 22,000 to 17,500 radiocarbon years B.P., when sea level dropped as low as 100 m (330 ft) below modern mean sea level. As a result of this low sea level stand, the Mississippi River entrenched its valley, at least, as far north as the latitude of Baton Rouge. Significant lowering of its floodplain probably occurred north of Baton Rouge and past the project reach. At this time, the available evidence indicates that the alluvial plain of the Mississippi River consisted of extensive braidplains occupied by braided streams carrying large quantities of glacial meltwater and sediment (Saucier 1981:14-16; Saucier and Smith 1986:739; Schumm and Brakenridge 1987:236).

Saucier (1981) and Saucier and Smith (1986) propose that the Mississippi River Alluvial Valley was never eroded completely of sediments during this low stand of glacial sea level as dramatically illustrated by Fisk (1944). Rather, it always was filled partially with a thick sequence of coarse-grained, fluvial sediments consisting mostly of sandy and gravelly glacial outwash. The erosional unconformity that forms the base of the Mississippi River Alluvial Valley originated not as the result of the formation of a dendritic stream network, but instead as the result of coalesced channel scouring and lateral planation of both braided and meandering fluvial systems (Schumm and Brakenridge 1987:236).

Saucier (1981) and Saucier and Smith (1986) hypothesize that during the period from 12,000 to 7000 radiocarbon years B.P., the Mississippi River filled its alluvial valley and created a series of discrete floodplain

surfaces that remained stable for periods of hundreds of years. The surface of the alluvial plain dating from approximately 12,000 radiocarbon years B.P. probably lies at shallow depths beneath the surface of the modern alluvial plains. At the latitude of Baton Rouge, it would lie about 25 m (82 ft) below the modern alluvial plain. Upvalley, the surface of the hypothetical Mississippi alluvial plain dating from 12,000 radiocarbon years B.P. would rise to a depth of 15 m (49 ft) beneath the modern alluvial plain near Natchez, Mississippi, and to a depth of 6 m at Memphis, Tennessee. Because the presumed depth of this surface lies above the 30 - 35 m (98 - 115 ft) depth of cutbank erosion, later meander belt development would have destroyed any Late Wisconsinan fluvial and, definitely, any Early and Middle Holocene fluvial and archeological deposits within the project reach (Heinrich 1991; Saucier 1981:10).

However, it is incorrect to presume that the Mississippi River alluvial plain constantly aggraded from 15,000 radiocarbon years B.P. to present. Starting about 12,000 radiocarbon years at the latitude of Baton Rouge, Louisiana, and continuing upvalley to about 9000 radiocarbon years B.P. at the latitude of Cairo, Illinois, the transition from braided streams to meandering river regimes may have involved alternating periods of fluvial erosion and deposition resulting in substantial degradation and aggradation of the valley floor (Autin et al. 1991:561). As a result, significant destruction and burial of the terminal Wisconsinan and Early Holocene archeological record might have occurred during Late Wisconsinan and the Early Holocene. At this time, the data needed to reconstruct the fluvial history of this period of time is lacking. Detailed research concerning the subsurface stratigraphy and sedimentology of the alluvial fill within the Mississippi River Valley will be needed before a clear picture of its Late Wisconsinan and Early Holocene history can be reconstructed and predictions concerning the potential occurrence of archeological deposits can be made.

Holocene Epoch

After the transition from braided to meandering fluvial systems, the Mississippi River has occupied at least five different meander belts during the Holocene Epoch. Because the project reach lies within the youngest of these meander belts, a review of the history of all of the meander belts is unnecessary. As currently accepted, details considering the chronology, river courses, and chronology of these meander belts are given by Autin et al. (1991:562) and Saucier (1981:16). Saucier (1974, 1981:16) and Saucier and Snead (1989) show the distribution of the remnants of each meander belt and their associated courses.

Prior to 2800 radiocarbon years B.P., the meander belts of the Mississippi fell along the western wall of this stretch of the Mississippi River Alluvial Valley (Saucier 1981:16). At this time, the project items probably contained a poorly developed drainage network contained within a backswamp. Prior to 2800 radiocarbon years B.P., the backswamp had buried completely the terminal Wisconsinan braidplains and, possibly, an unnamed meander belt of the Mississippi River. Saucier (1969) has mapped fragments of such a buried meander belt adjacent to Meander Belt No. 1 within West Baton Rouge and Iberville parishes and within the general project area (Saucier 1974, 1981).

By about 2800 radiocarbon years B.P., the Mississippi River established its present course and Meander Belt No. 1 by channel avulsion. After channel avulsion, the newly created channel slowly extended itself along the eastern valley wall of the Mississippi River Alluvial Valley. This nonmeandering channel slowly incised its thalweg into the underlying backswamp deposits and built a low and confining levee during the next few hundred years,. As channel flow increased, the channel dug deeper into the underlying fluvial sediments and continued to build its natural levee. Eventually, incipient meander loops developed along this course as small twists and turns in the channel. This was a period of rapid aggradation because the flow was still unconfined and levee overtopping was common (Farrell 1989:159-164).

Soon after the diversion of the full flow of the Mississippi River into Meander Belt No. 1, the channel became fully developed and the natural levees achieved their highest elevation. As the meander belt

increased in width and the natural levees became more confining, the deposition of sediments on the natural levee became restricted to the concave side of the meander loop. Also, the height of the levees prevent floodwaters from uniformly overflowing and submerging the entire levee. These high levees restricted the flow of flood waters across the natural levees and into crevasses, resulting in the development of crevasse splays. As a result, most of the natural levee is high and dry during a typical annual flood (Farrell 1989:164).

With the establishment of full flow within Meander Belt No.1, the Mississippi River started to migrate back and forth. This back and forth lateral migration completely reworked the upper 30 to 35 m (100 to 115 ft) of the alluvial plain within the project item. As the river course migrated, its cutbank removed the upper 30 to 35 m (100 to 115 ft) of its alluvial plain, while a similar thickness of point bar and natural levee deposits accumulated on its convex bank. As a result, backswamp, meandering river, and braided stream sediments older than 2800 radiocarbon years B.P. have been removed completely and backfilled with sediments younger than 2800 radiocarbon years B.P. to form the current surface of Meander Belt No. 1.

Remnants of older meander belt surfaces and deposits may occur as isolated patches within Meander Belt No. 1. These small patches of older meander belt deposits and surfaces escape destruction because of the geometry of intersecting meander loops. As a result, rare patches of fluvial sediments and associated archeological deposits that predate Meander Belt No. 1 might occur within it (Whitney Autin, personal communication 1991).

Historic Development

Historic maps and references such as Fisk (1944) demonstrate that the Mississippi River has migrated back and forth across a narrow band of Meander Belt No. 1 within the Palmetto and Coochie Revetment area. Since the formation of the Homochitto Cutoff in 1776, the Mississippi River has migrated back and forth across a band about 1 to 3 km (0.6 to 1.8 mi) in width (Fisk 1944).

Palmetto Revetment Project Item

The Palmetto Revetment item lies along the left descending bank of the Mississippi River just south of Kienstra, Louisiana (Figure 6). This portion of the project reach consists of the upstream edge of the Palmetto Point point bar. This point bar is about 2.2 km (1.4 mi) wide at its widest point and about 1.3 km (0.8 mi) wide at the south end of the project item. The Palmetto project item lies partially within the 1828 channel and almost entirely within the 1879 - 1880 channel (Figure 7). Finally, as indicated in Figure 6, all but the southernmost end of this project item lies west of the 1918 bankline. Therefore, it consists almost entirely of point bar deposits that have accumulated since 1918, except for its southernmost end (Fisk 1944; Saucier 1969; U.S. Geological Survey 1959).

The southernmost end of the Palmetto Revetment project item lies east of the 1918 bankline and about 600 m (1,970 ft) upstream of the Mississippi River bankline as it was just prior to its cutoff in 1776 (Figure 6). Therefore, the point bar deposits underlying the southernmost segment of the Palmetto Bend project item predates 1776, i.e., when the abandoned meander loop was formed by a neck cut-off. However, because of the rapid rates at which the Mississippi River laterally migrates, these older point bars deposits probably predate 1776 by only a few tens of years (Fisk 1944; Gagliano and Howard 1984).

Coochie Revetment Project Item

An analysis of historic mapping demonstrates that the Coochie Revetment project item lies entirely within historic ridge and swale topography that forms most of this stretch of Meander Belt No. 1 (Figure 8).

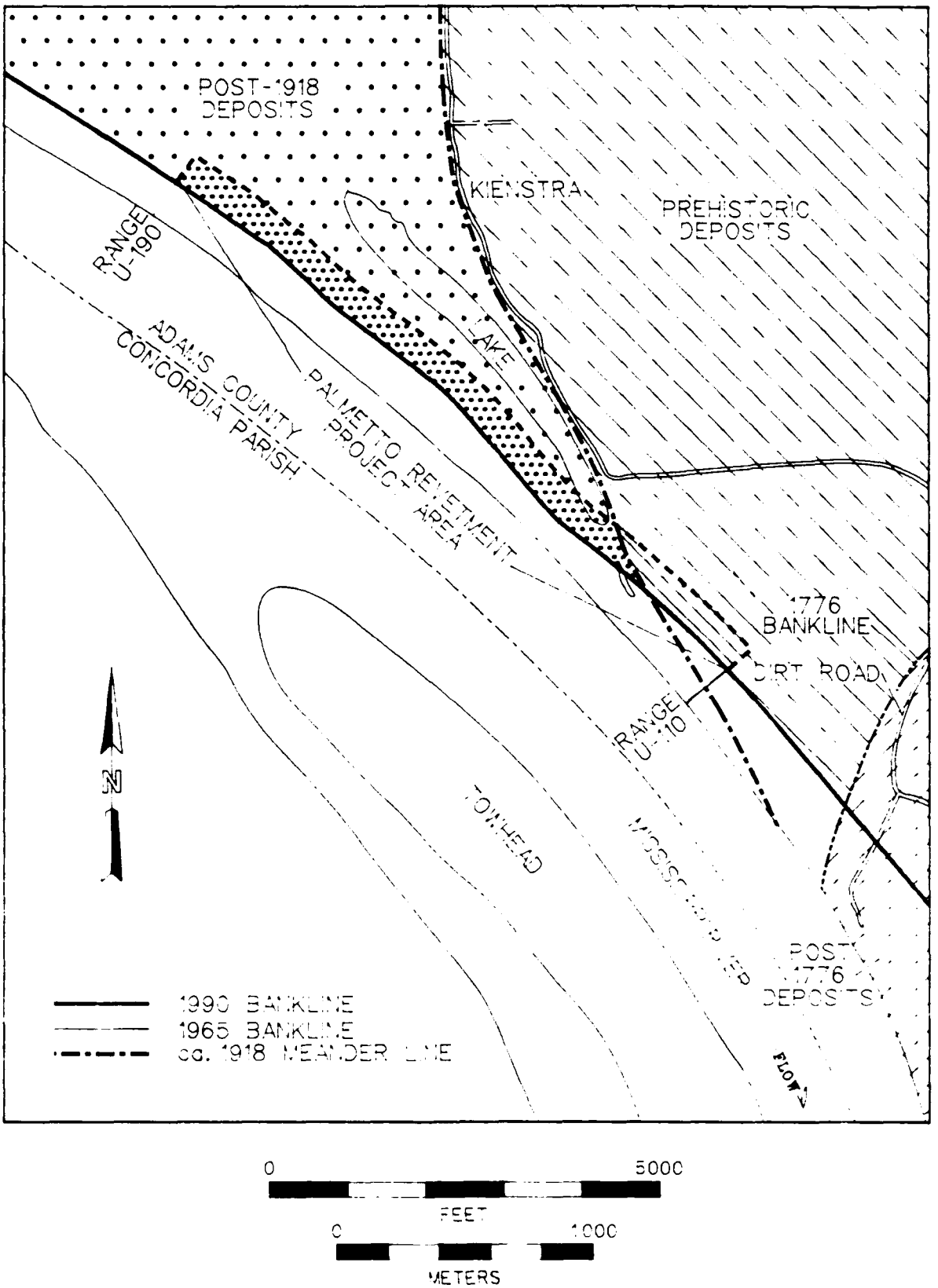


Figure 6. Plan of the Palmetto Revetment project area, showing prehistoric land surfaces and post - 1918 alluvial deposits located within the project area.

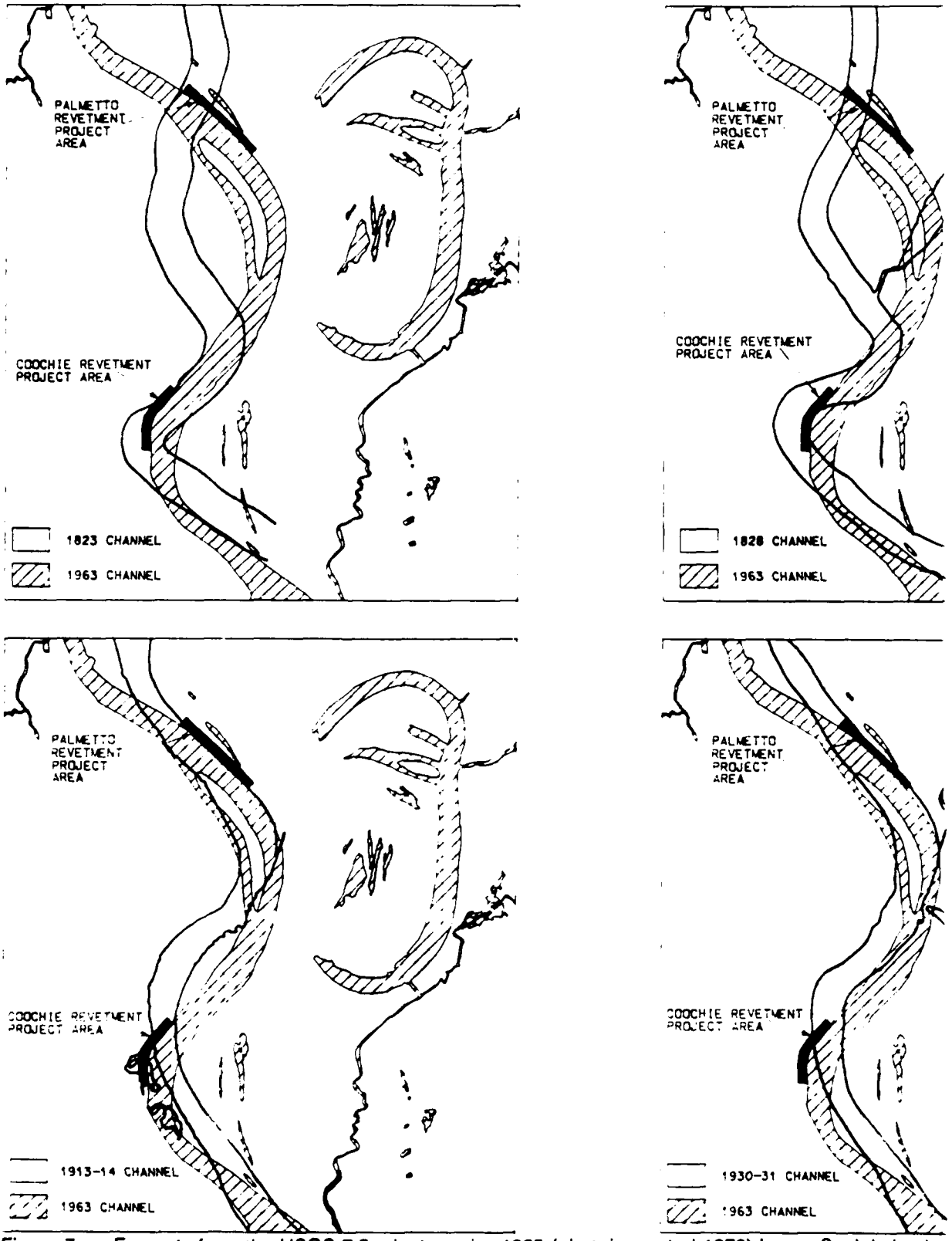
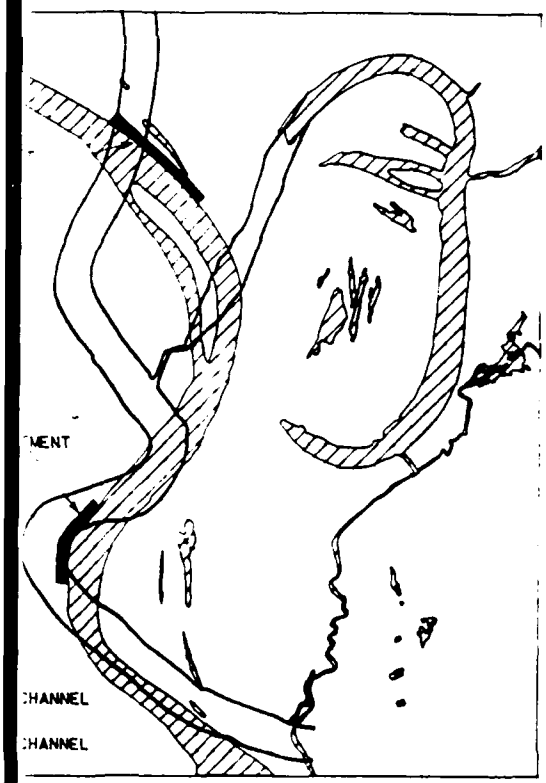
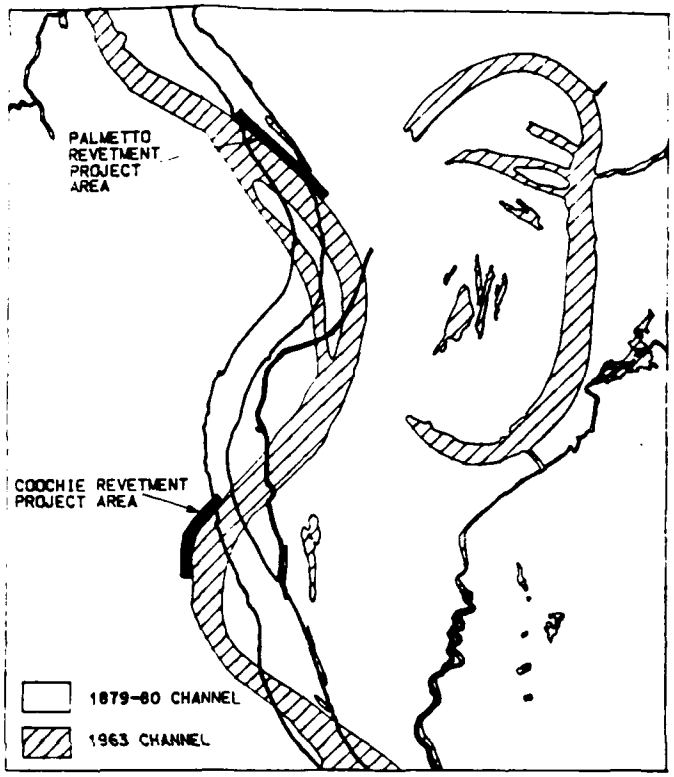
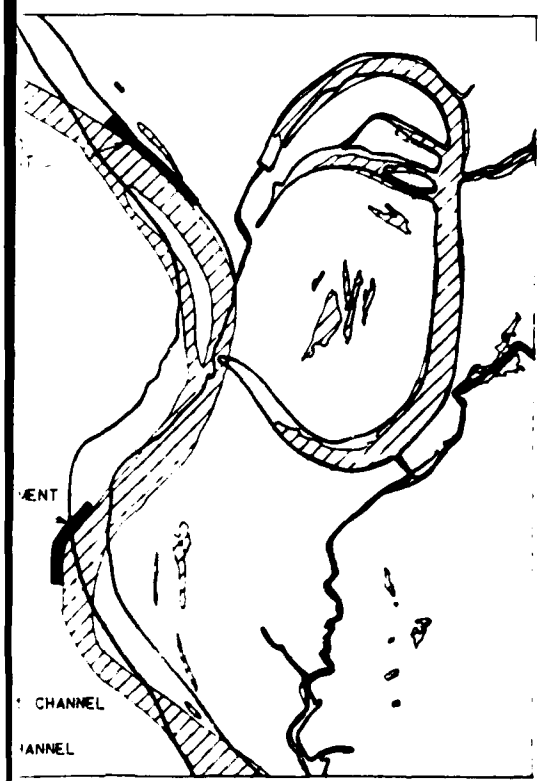


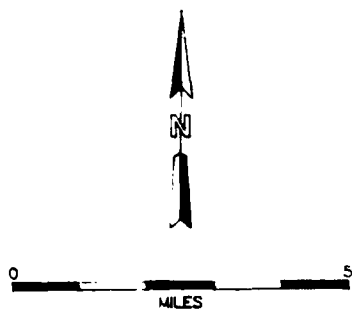
Figure 7. Excerpts from the USGS 7.5 minute series 1965 (photoinspected 1972) Lower Sunk Lake, Lo Mississippi - Louisiana; the 1965 Turnbull Island, Louisiana - Mississippi; and, the 1965 Fort A quadrangles; historic maps 1823/1828 township maps of Mississippi and Louisiana 1879/18 and 60; 1913/1914 Mississippi River Commission charts 60A and 60B; 1930/1931 topographi changes within the study reach.

(2)









ower Sunk Lake, Louisiana - Mississippi; the 1965 Lake Mary,
nd, the 1965 Fort Adams, Mississippi - Louisiana topographic
Louisiana: 1879/1880 Mississippi River Commission charts 59
30/1931 topographical quadrangle, showing historic bankline

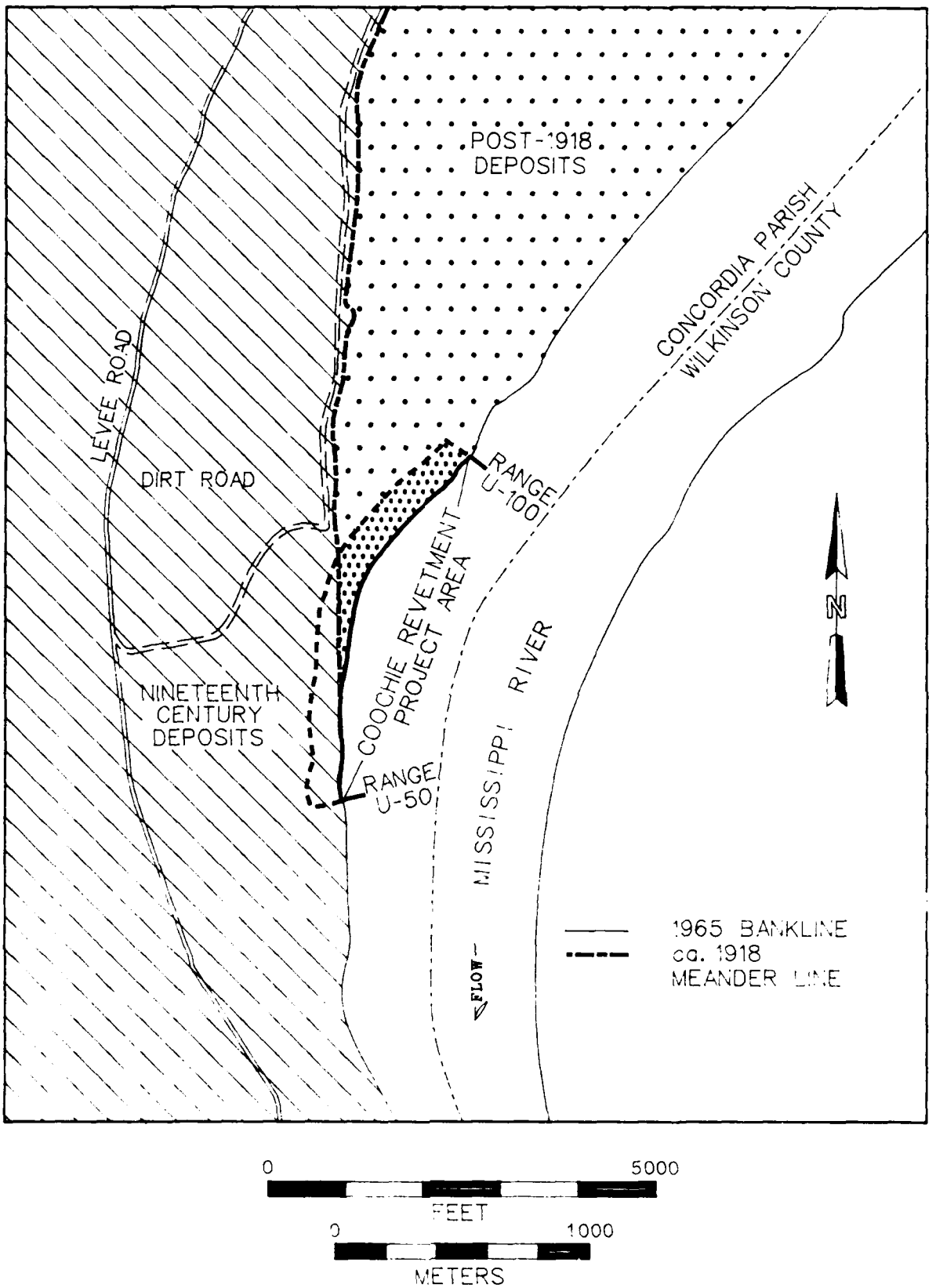


Figure 8. Plan of the Coochie Revetment project area, showing prehistoric land surfaces and post - 1918 alluvial deposits located within the project area.

As shown by Fisk (1944), the entire Coochie Revetment area lies entirely within the channel of the Mississippi River in 1775. As shown by Fisk (1944) and 1823 and 1828 river surveys (Figure 7), the channel migrated westward through the project area. By 1879 - 1880, the Mississippi River had migrated eastward and back across the project area. Again, the channel had shifted westward by 1913 - 1914; the northern third of the survey then fell within the channel of the Mississippi River where it remained until sometime after 1930 (Figure 7). As a result of this continual shifting of the Mississippi River, all of the Coochie Revetment project item postdates 1828, the northern half of it postdates 1918, and the northern third postdates 1930 (Fisk 1944; Saucier 1969; U.S. Geological Survey 1959).

Geoarcheology

Historic fluvial processes strongly influence the formation, preservation, and occurrence of archeological deposits. First, differences in the soil moisture, surface drainage, availability of natural resources, proximity to transportation routes, and hazards posed by flood and cut bank erosion between landforms and surfaces greatly affect how each was utilized by prehistoric inhabitants. In addition, the silty and sandy soils present on the natural levees of the Mississippi River are ideal for agriculture.

Second, the environment of deposition directly affects the preservation of archeological deposits. The vertical accretion of sediments that aggrade natural levees and fill backswamps and abandoned channels acts to preserve the archeological deposits within these environments. However, the continually wet and swampy, or poorly drained nature of the backswamp and channel environments discourages human settlement and therefore the accumulation of most archeological deposits within them. Because the lateral accretion of point bar deposits occurs mostly within the river channel, they lack in situ archeological deposits, except for sites like historic shipwrecks (Goodwin et al. 1991).

Third, the active lateral migration of the Mississippi River significantly affects the preservation of archeological deposits that predates the abandonment of an abandoned river channel or course segment within a meander belt. While active, a typical Mississippi River channel rapidly migrates back and forth across its meander belt. As the Mississippi River migrates, its cutbanks consume the fluvial deposits and any enclosed archeological deposits that form the upper 30 to 35 m (100 to 115 ft) of the Mississippi River Alluvial Valley. As a result, meandering of an active river channel will destroy all archeological deposits that predate the formation of a meander belt and many of the archeological deposits contemporaneous with it. However, it is possible that sunken ships that have an intact and solid hull can survive cutbank erosion (Goodwin et al. 1991; Heinrich 1991).

Finally, an active meander belt will bury the contemporaneous archeological deposits not destroyed by lateral migration. An active channel would rapidly migrate away from and bury any archeological deposits that would have formed adjacent to an active point bar. In addition, an actively, laterally migrating channel would consume any sites located on or present within the natural levee or its cutbank. If a Mississippi River cutbank was to migrate up to and stop at a preexisting site, that site would be buried beneath natural levee deposits. As a result, only those archeological deposits that date to a few tens of years prior to and postdate the abandonment of a channel will occur as surface sites. Therefore, the active lateral migration of a Mississippi River channel will either bury or destroy those archeological deposits that predate the abandonment of a river channel or course segment on its natural levee (Goodwin et al. 1991).

Palmetto and Coochie Revetment Project Items

The formation of Meander Belt No. 1 has destroyed the older meander belt surfaces and deposits present within both project items. Judging from the depths of clay plugs and channels shown by Saucier (1969), cutbank erosion associated with the historic lateral migration of the Mississippi River has destroyed

older meander belt and backswamp surfaces and eroded older fluvial deposit to depths of over 30 to 37 m below the current surface of Meander Belt No. 1. Contemporaneous deposition of point bar deposits rebuilt the alluvial plain with historic point bar deposits to form the ridge and swale topography of Meander Belt No. 1 within which both project items lie. As a result, within the Coochie Revetment project item, the oldest underlying point bar deposits postdate 1823 by a few years at most, while point bar deposits within its northern half postdate 1930 at their youngest and postdate 1918 at their oldest. The oldest point bar deposits within the southeastern end of the Palmetto Revetment project item probably predate 1776 by, at the most, a few tens of years. The remainder of the Palmetto Revetment project item postdates 1918. Because the historic meandering of Meander Belt No. 1 has destroyed older fluvial deposits and archeological deposits, both buried and surface prehistoric cultural deposits will be lacking within both project items. The age of the point bar deposits also will limit significantly the age of intact historic that can be found within them.

Fauna and Flora

The flora of the leveed floodplains of the Mississippi River consist of a complex mosaic of bottomland hardwood forests. As defined by the Society of American Foresters (1975), the Black Willow, Cottonwood, Sycamore-Sweetgum-Elm, Sweetgum, Sweetgum-Oak, Hackberry-Elm-Ash, Overcup Oak-Bitter Pecan, and Cypress-Tupelo forest types cover large parts of the nonleveed floodplains within this segment of the Mississippi River. Of these forest types, the Hackberry-Elm-Ash, Sycamore-Sweetgum-Elm regionally account for over half of the forested areas. Also, scrub locally is a significant component of the vegetation cover, particularly in recently clearcut areas and developing newstands within the nonleveed floodplains (Klimas 1988:22-23).

Within the older, nonswampy portions of the alluvial plain, the overstory of these forest types vary greatly in structure and composition. The species that compose the overstory include tupelo gum (*Nyssa aquatica*), various oaks (*Quercus* sp.), hackberry (*Celtis laerigata*), boxelder (*Acer negundo*), and American sycamore (*Platanus occidentalis*). Where disturbed by logging, the overstory of the bottomland hardwood forest is dominated by ash (*Fraxinus* sp.), boxelder (*Acer negundo*), hackberry (*Celtis laerigata*), and American sycamore (*Platanus occidentalis*). Within the overstory, major sources of food for wildlife are the tupelo gum (*Nyssa aquatica*), hackberry (*Celtis laerigata*), green ash (*Fraxinus pennsylvanica*), American elm (*Ulmus americana*), red maple (*Acer rubrum var. drummondii*), nuttall oak (*Quercus nuttalli*), overcup oak (*Quercus lyrata*), honey locust (*Gleditisia tricanthos*), sweet gum (*Liquidambar styraciflua*), persimmon (*Diospyros virginiana*), swamp dogwood (*Cornus drummondii*), sweet pecan (*Carya illinoensis*), and red mulberry (*Morus rubra*). The bottomland hardwood forest contains a great diversity of shrubs and bushes. Some of the understory plants that are important sources of food for wildlife are asters (*Aster* sp.), buck vine (*Amelopsis arborea*), dewberry (*Rubus* sp.), elderberry (*Sambucus canadensis*), and various maples (*Acer* sp.). Significant portions of the bottomlands are dominated by tupelo gum (*Nyssa aquatica*) and bald cypress (*Taxodium distichum*) swamps (Gulf States Utilities Company 1974a, 1974b; Klimas 1988; Martin 1988).

The bottomland forests of the Mississippi River support a large and varied fauna. The fauna includes game mammals such as white-tailed deer (*Odocoileus virginianus*), gray squirrel (*Sciurus carolinensis*), fox squirrel (*Sciurus niger*), eastern cottontail (*Sylvilagus floridanus*), swamp rabbit (*Sylvilagus aquaticus*), and black bear (*Ursus americanus*). The bottomland forests are excellent habitat for the white-tailed deer and swamp rabbit and its large overstory trees provide habitat for the squirrels. The fauna of bottomland hardwoods also includes important predator mammals such as red fox (*Vulpes fulva*), gray fox (*Urcyon cinereoargenteus*), raccoon (*Procyon lotor*), long-tailed weasel (*Mustela frenata*), mink (*Mustela vison*), bobcat (*Felis rufus*), and the endangered and regionally expatriated eastern panther (*Felis concolor*) and red wolf (*Canis niger*). These species, together with raptors, are important in limiting the size of rabbit, mouse, squirrel, and bird populations. Mink, raccoon, beaver (*Castor canadensis*), and opossum (*Didelphis*

virginiana) are important as fur bearers. The bottomland hardwood forests and swamps are home for amphibians that consist of various salamanders, toads, tree frogs, and true frogs. These amphibians typically require very moist soils, temporary pools, or permanent ponds. The numerous reptiles found within the bottomland hardwood forests consist not only of the American alligator (*Alligator mississippiensis*), but also of a number of iguanids, skinks, lizards, snakes, pit vipers, and turtles. Like the amphibians, most of the reptiles prefer either moist or aquatic habitats. Finally, over a hundred species of birds are either permanent, winter, spring and summer, or transient residents of the bottomland hardwood forests. These birds include major game birds such as the wood duck (*Aix sponsa*) and wild turkey (*Melwagris galloparo*) (Gulf States Utilities Company 1974a, 1974b; Lowery 1974a, 1974b; Martin 1988).

Varied aquatic and semi-aquatic faunas characterize the aquatic environments of the Mississippi River and its bottomlands. Within the region of the project reach, the fauna consists of over 85 species of fish and over 20 species of reptiles and amphibians. The larger fish that could have been exploited as a food resource include the white bass (*Morone chrysops*), yellow bass (*Morone mississippiensis*), carp (*Cyprinus carpio*), blue catfish (*Ictalurus furcatus*), channel catfish (*Ictalurus punctatus*), flathead catfish (*Pylodistis olivaris*), white crappie (*Pomoxis annularis*), freshwater drum (*Aplodinotus grunniens*), garfish (*Lepisosteus sp.*), sauger (*Stizostedion canadense*), shads (*Dorosoma sp.*), and various suckers (various genera of *Catostomidae*). Similarly, over 80 species of fish and 50 species of reptiles and amphibians can be found associated with the bayous and ponds of the Mississippi River floodplain. The more common species include the largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), bowfin (*Amia calva*), black crappie (*Pomoxis nigromaculatus*), green sunfish (*Lepomis cyanellus*), redear sunfish (*Lepomis microlophus*), and warmouth (*Lepomis gulosus*). All of these fish, except for the bluegill (*Lepomis macrochirus*) and the redear sunfish (*Lepomis microlophus*) inhabit the Mississippi River (Conner 1977; Gulf States Utilities Company 1974a, 1974b).

Climate

Within this portion of the Mississippi River Alluvial Valley, the summers are long, hot, and humid. Typically, this hot and humid weather lasts from May through September because of the dominance of this area by warm, moist maritime air masses originating from the Gulf of Mexico. July is the hottest summer month with an average daily maximum temperature of 91.6° F. An average daily minimum temperature of 71° F is recorded for the nearest weather station located at Old River Lock within Pointe Coupee Parish. Between 1965 and 1979, the highest recorded temperature at the Old River Lock was 101° F; this record was set on July 25, 1977. The primary cause of precipitation during the summer are thunderstorms. Precipitation occurs either as brief heavy showers or gentle rains. June is the driest month of the year with an average monthly precipitation of 7.42 cm (2.92 inches). During late summer, infrequent tropical disturbances are a source of heavy rain and gentle showers (Martin 1988; Schumacher et al. 1988).

Fall generally lasts from late September to early November. Generally, fall weather consists of humid, mild, and sunny days interrupted by infrequent cold fronts that bring brief spells of cooler and drier weather. During the fall, precipitation results both from the infrequent squall line associated with either a cold or warm front and the occasional tropical storm. Only June is drier than October which has an average monthly precipitation of 8.66 cm (3.41 in) (Martin 1988; Schumacher et al. 1988).

The winters are cool, with occasional incursions of cold air from the north. The squalls and showers associated with these infrequent cold fronts are the cause of winter rainfall within the project area. December is the wettest month, with its average monthly precipitation of 16.8 cm (6.62 in). January is the coolest month, with an average daily temperature of 47.1° F. The lowest recorded temperature during the period of record between 1965 and 1979 was 13° F, which occurred on January 11, 1977 (Martin 1988).

CHAPTER III

PREHISTORIC SETTING

The Louisiana portion of the project item lies within Management Unit II, as defined by *Louisiana's Comprehensive Archaeological Plan* (Smith et al. 1983). Management Unit II encompasses thirteen parishes in northeastern Louisiana; the area is dominated by rolling uplands and adjacent alluvial valleys. While a state archeological plan has not been completed for Mississippi, the prehistoric sequence of the area under examination here is similar to that observed in Concordia Parish, Louisiana. This cultural sequence has been divided into three stages: Paleo-Indian, Archaic (Meso-Indian), and Neo-Indian. These stages relate to gradual cultural changes and are defined by specific technological and economic characteristics. The Neo-Indian Stage has been divided into a number of cultures and periods, including Poverty Point, Tchula Period/Tchefuncte culture, Marksville, Troyville, Coles Creek, Plaquemine, Mississippian, and Caddo. The Caddoan culture, which dominated much of northwestern Louisiana's Neo-Indian Stage, is not discussed in this chapter since its direct influence apparently did not extend into Concordia Parish or the adjacent portions of Mississippi.

Paleo-Indian (10,000 - 8000 B.C.)

The earliest inhabitants of Louisiana were Paleo-Indians who arrived in the region perhaps as early as 12,000 B.C. Archeological research in the state dates their presence from 10,000 to 8000 B.C. (Gagliano and Saucier 1963; Servello 1982; Smith et al. 1983; Webb et al. 1971). Paleo-Indian subsistence is thought to have been based primarily on the hunting of now-extinct Pleistocene megafauna such as mammoth and giant ground sloth. This subsistence pattern appears to have required highly mobile band-level social organizations.

Archeological evidence suggests that the Paleo-Indian tool kit consisted of large, thin, bifacially worked fluted lanceolate projectile points, bifacial cleavers, core handaxes, knives, drills, end scrapers, side scrapers, and spokeshaves. Lithic technology exhibited high quality workmanship; tools show evidence of fine flaking, retouching, basal grinding, and thinning (Smith et al. 1983). Paleo-Indian projectile point types recovered from Louisiana include Angostura, Clovis, Dalton, Eden, Pelican, Plainview, San Patrice, Scottsbluff, and Quad. Although there is little evidence of wood, bone, and fiber materials, these perishable items probably held great importance.

Two Paleo-Indian sequences have been recognized within the southeastern United States (Walthall 1980). These divisions are defined primarily on the basis of projectile point types. A Llano (Clovis), Folsom, and Plano sequence is recognized in the western portions of this area, and a Clovis, Cumberland, and Quad sequence is recognized in eastern portions. Projectile point types found throughout Louisiana indicate that the two sequences overlap in the state. While Paleo-Indian finds are common in the Tertiary uplands and the uplands/floodplain bluff areas of Louisiana and Mississippi, they are scarce on the more recent floodplains of the Mississippi and Red Rivers and their tributaries. Floodplains generally are considered poor areas for locating Paleo-Indian remains (Neitzel and Perry 1977), due to the recency of these landforms, or to cognizant site selection made by Paleo-Indians. Because of recency of the landforms, no Paleo-Indian sites are anticipated within the project reach.

Archaic (Meso-Indian) Stage (8000 - 1000 B.C.)

The Meso-Indian Stage represents a lengthy time characterized by a "filling in" of regional areas by peoples adapting to essentially modern natural environments. The concept of an Archaic Stage of cultural development refers more formally to developments first recognized by William Ritchie (1932) in upstate New York. The Archaic Stage is viewed as a series of skillful adaptations to a broad range of local conditions by small groups or bands of semi-nomadic peoples. These adaptations become more locally specific through time (Muller 1983). The Archaic generally is separated into the following subdivisions: Early Archaic, 8000 - 6000 B.C.; Middle Archaic, 6000 - 4000 B.C.; and, Late Archaic, 4000 - 1000 B.C.

The diversified hunting, gathering, and fishing subsistence system of Archaic peoples resulted in the development of quasi-permanent settlements (Neitzel and Perry 1977). Size, content, and distribution of Archaic sites suggest that site occupation was "scheduled" according to the seasonal availability of select natural resources. Caldwell (1958) has suggested the concept of "primary forest efficiency" to explain this adaptation. Simply stated, this concept underscores the importance of forest resources to the prehistoric economy in eastern North America.

A variety of materials were utilized for tool manufacture. New techniques for polishing and grinding rocks emerged; these techniques are characteristic of the Archaic Stage. Principal rock types included granitic rock, sandstone, slate, steatite, and scoria. Shell and bone were used throughout the latter half of the Archaic. A wide variety of side-notched, corner-notched, and side-stem projectile (dart) points were used throughout the Archaic. Observations on the regional varieties of projectile point types have resulted in the identification of a number of Archaic phases throughout the southeast.

Early Archaic (8000 - 6000 B.C.)

Early Archaic peoples exploited a larger variety of resources than their Paleo-Indian predecessors; these resources included whitetail deer, raccoon, bear, dog, groundhog, squirrel, fox, beaver, bobcat, skunk, mink, muskrat, porcupine, wild turkey, passenger pigeon, goose, duck, and various aquatic and semiaquatic species (Neuman 1984; Walthall 1980). Common Early Archaic projectile point varieties include Angostura-like, Dalton, and San Patrice. Unfortunately, very few Early Archaic components have been isolated within Management Unit II in Louisiana, or in the adjacent parts of Mississippi. Several Early Archaic projectile point types and horizons found throughout the southeastern United States include Big Sandy, Kirk, and Bifurcate horizons (Walthall 1980).

Early Archaic cultural manifestations resemble in content and distribution those defined for the terminal Paleo-Indian stage. A substantial inventory of wood and bone working tools were utilized during this time. Carved barbed points, bone pins, and double-pointed points (gigs) have been recovered in association with Early Archaic sites (Purdy 1973; Waller 1976). Terminal Paleo-Indian sites in Louisiana often occur as basal components on Early Archaic sites, indicating an in situ development for the Early Archaic (Servello 1982).

Middle Archaic (6000 - 4000 B.C.)

Middle Archaic cultural manifestations generally correspond with the Hypsithermal Interval. During this time, the climate changed from cold and moist to warmer and drier. A shift in the scheduling of economic activities to include shellfish occurred in the southeast at this time (Walthall 1980). An emphasis on aquatic and riparian resources (shellfish, fish, reptiles, and amphibians) indicates a trend toward maximization of local resources (Smith et al. 1983).

Population estimates during the Middle Archaic show an increase over previous levels; however, these larger groups appear to have been less mobile than during previous times (Muller 1983). Settlement pattern types identified for the Middle Archaic Period include a central-based wandering pattern with base and satellite camps, and a restricted wandering pattern. In the central-based wandering pattern, the central base camp was occupied for both subsistence and maintenance activities; satellite sites were occupied for resource procurement. The restricted wandering pattern involved group movement from one locale to the next as resources became available.

Artifact assemblages of the Middle Archaic are characterized by a plethora of stemmed, broad blade projectile points; these probably were used in conjunction with an atlatl or spear thrower. Middle Archaic projectile point types include Yarbrough, Yantis, Palmillas, Kent, Elam, Keithville, Carrollton, and Morrow Mountain varieties. Heavy grinding and nutting stone tools and tools such as axes, adzes, wedges, and gouges indicate that Middle Archaic peoples were well-adapted to the southern hardwood forests. Bone fish hooks, net sinkers, and plummets reflect an increasing reliance on aquatic resources.

Human burials have been found at Middle Archaic sites in the southeast. Burials occur flexed and unflexed, with few or no grave goods (Muller 1983). These simple interments and the lack of grave offerings imply that Middle Archaic societies were egalitarian.

Distributional studies show that Middle Archaic floodplain sites containing thick midden deposits representing quasi-permanent or permanent habitations tend to be located on the floodplains of major rivers. However, no such sites have been identified along the Mississippi River floodplain in the project reach. The absence of permanent or semi-permanent Middle Archaic sites apparently reflects the dynamic nature of the river; these sites have been obliterated or obscured by river processes, including riverine meandering, bankline cutting, or possibly alluvial overbank deposition.

Late Archaic Stage (4000 - 1000 B.C.)

The social organization unit characteristic of the Late Archaic was the macroband, made up of approximately 30 or more people who remained together for part of the year and temporarily split into smaller groups during other parts of the year. Macrobands were formed during the spring and summer; during the winter, the macrobands split into microbands to exploit nearby upland ranges (Jenkins and Krause 1986; Muller 1983). This social pattern is viewed as responsive to the fluctuating availability of natural resources within a particular home range. This fusion/fission model reflects subsistence practices that were scheduled around the seasonal availability of key species. Deer, fish, nuts, and shellfish were of primary importance. Late Archaic peoples also may have practiced limited horticulture. Potential cultivars include sunflower (*Helianthus* sp.), marsh elder (*Iva* sp.), various species of amaranths, goosefoot (*Chenopodia* sp.), gourds, and squashes. It is not believed that these cultivars were exploited intensively. The Late Archaic is represented by a wide range of site types in the vicinity of the project area. While no intensively occupied sites are known from within the Mississippi River floodplain in the region, numerous small campsites and special function sites have been recorded within both Management Unit II and in the loess hills of Mississippi, east of the project area.

Projectile point varieties recognized from the Late Archaic Stage in Louisiana and western portions of Mississippi, included various expanding, contracting, and straight stem forms. Yarbrough, Carrollton, Gary, Ensor, Ellis, Elam, Marcos, Wells, Williams, and Bulverde projectile point types are common. Shell, bone, and stone pendants, musical tube pipes, and a variety of other artifacts also are associated with the Late Archaic. Artifact variability also appears to increase during the Late Archaic. The recency of landforms within the two project items suggest that no Archaic sites are located in those areas.

Neo-Indian Stage (1500 B.C. - A.D. 1700)

The Neo-Indian Stage is made up of seven distinct culture units in Louisiana, and the project area portion of Mississippi: Poverty Point, Tchefuncte, Marksville, Troyville-Coles Creek, Plaquemine, Mississippian, and Caddo. These groups span a time period from 1500 B.C. to historic contact. This period represents the first use of ceramic vessels and clay objects, and the construction of large earthen mounds. Horticultural practices also intensified. The use of the bow and arrow became widespread, as evidenced by the presence of smaller projectile points. As mentioned above, Caddo culture is not discussed below since its influence apparently terminated west of the project reach.

Poverty Point Period (1500 - 500 B.C.)

The Poverty Point period and Poverty Point culture are named after the type site (16WC5) located in northeastern Louisiana. At the time of its construction, the Poverty Point site was the largest earthwork in the Americas. This site consists of six concentric segmented ridges spaced 15 to 46 m (50 to 150 ft) apart. In addition, other Poverty Point mounds are scattered throughout the site area. The largest of these, Mound A, may have been a bird effigy. The numerous clay balls at the site, called Poverty Point Objects, have been interpreted as "cooking balls" which, after heating, were used to warm liquids; these objects appear to have been substitutes for stone, which is scarce in the Lower Mississippi River Alluvial Valley. A microlithic tool industry mirrors the conservation of lithic materials to some degree. The artifact assemblage at Poverty Point includes tools and trade items from Alabama, Arkansas, Tennessee, Ohio, Indiana, and Illinois. Steatite vessels were obtained from sources in Georgia and North Carolina. Copper was obtained from sources in Michigan. Ceramics from the St. Johns River in Florida appear later in the period.

In addition to the extensive earthworks, baked clay balls, lapidary work, and a microlithic stone tool industry, diagnostic traits characteristic of Poverty Point culture include steatite vessel fragments, hematite plummets, jasper beads, panpipes, animal effigies in stone and shell, and Delhi and Motley projectile points (Ford and Webb 1956; Kuttruff 1975; Webb 1968). Poverty Point period artifacts reflect the increased intensity in exchange that began during the Middle and Late Archaic periods. There also is evidence of greater social stratification. Very little subsistence information has been obtained from the Poverty Point site. Specialization in the procurement of deer and fish continued from Late Archaic times; this strategy may have supported these cultural developments. Incipient horticulture may have focused on a variety of cultigens including sunflower (*Helianthus* sp.), marsh elder (*Iva* sp.), various amaranths, goosefoot (*Chenopodia* sp.), gourds, and squashes.

Poverty Point sites are distributed linearly along the Mississippi River Valley and three of its major tributaries: the Arkansas, Ouachita, and Yazoo rivers. Poverty Point sites on Maçon Ridge, overlooking Bayou Maçon, have led some to suggest that the location of the Poverty Point type site allowed its inhabitants to exploit, if not control, the flow of trade goods between other communities (Muller 1983; Neitzel and Perry 1977; Smith et al. 1983).

Studies on the distribution of Poverty Point sites indicate that Poverty Point locations include Quaternary terraces or older land masses overlooking major stream courses, major levees of active or relict river channels, river/lake junctions, and coastal estuaries or older land surfaces located within the coastal marsh (Gagliano and Saucier 1963; Neuman 1984; Weinstein et al. 1979).

Tchula Period/Tchefuncte Culture (500 B.C. - A.D. 100)

The Tchula period is characterized by the first widespread use of pottery, albeit in the context of a Late Archaic-like hunting and gathering tradition, and with a Late Archaic-like tool inventory (Neuman 1984;

Smith et al. 1983). Within the early Tchula period, the Tchefuncte culture evidenced the earliest use of ceramics in the Lower Mississippi Valley (Ford and Quimby 1945). Tchefuncte culture was defined at the type site, Tchefuncte (16ST1), located on the north shore of Lake Pontchartrain, in St. Tammany Parish, Louisiana. Tchefuncte ceramic assemblages included both plain and decorated wares that exhibited a soft and chalky paste, and either a sand or clay temper. A variety of vessel forms emerged, many with flat bases or with foot supports. Punctations, narrow and wide line incisions, and simple rocker stamping decorations commonly appear on these vessels.

Tchefuncte ceramics lack local antecedents in the region. They may have originated from the Stallings Island and Orange complexes of the Georgia-Florida coast (Neuman 1984). The spread of Tchefuncte across the coast and up the Mississippi River and its tributaries is indicated by the presence of ceramic material at a number of sites; in 1983, Louisiana's archeological plan identified 18 Tchefuncte sites in Management Unit II (Smith et al. 1983).

Tchefuncte sites indicate a persistence of Late Archaic life-ways and lack the complexity of earlier Poverty Point sites. The large-scale earthwork or mound construction and widespread trade networks evidenced during Poverty Point times are absent. Late Archaic or Poverty Point projectile point types found in Tchefuncte contexts include Gary, Ellis, Delhi, Motley, Pontchartrain, Macon, and Epps (Smith et al. 1983). Tchefuncte assemblages also included boatstones, grooved plummets, mortars, sandstone saws, bar weights, scrapers, and chipped celts. Socketed antler points, bone awls, fish hooks, and bone ornaments also were found associated with Tchefuncte components. However, it is the presence of the distinctive pottery type that best characterizes Tchefuncte culture. Mounds constructed specifically for burial purposes appear late in the Tchefuncte Period. This facet of Tchefuncte culture forms an important link with the subsequent Marksville Period.

Marksville Period (A.D. 100 - 400)

The Marksville culture, typified by the Marksville site (16AV1), in Avoyelles Parish, Louisiana, is viewed as a hybrid manifestation of the Hopewellian culture climax that preceded it in the midwest. That the indigenous Tchefuncte culture in the Mississippi River Valley evolved into Marksville culture is evidenced by continuities in ceramic manufacture, mortuary practices, and settlement patterns.

Similarities between Marksville culture and the Hopewellian cultural climax of the midwest were recognized early in the archeological literature. Seltzer (1933a; 1933b) reported on the similarities in design. Decorative motifs shared by Marksville and Hopewell ceramics included cross-hatching, U-shaped incised lines, zoned, dentate rocker stamping, cord-wrapped stick impressions, bisected circles, and stylized bird motifs (Smith et al. 1983). While these new motifs and decorative treatments can be traced to the Illinois Valley, early Marksville ceramics do not represent a significant advance in ceramic manufacturing techniques when compared with late Tchefuncte ceramics. A strong continuity in attributes of paste and shape also is evident (Toth 1988).

Marksville culture is characterized by an intensification of ritual associated with mortuary activities, and by a resurgence in inter-regional exchange of prestige items (Cantley et al. 1984). Burial practices and material goods reflect participation in the "Hopewell Interaction Sphere" (Struever 1964). Conical burial mounds with log tombs or platforms appear early in the Marksville Period. Conical mounds normally range between 15 and 30 m (50 and 100 ft) in diameter and between 1.5 and 6 m (5 to 20 ft) in height. Mound interments vary between sites, but bundle burials, flexed burials, and cremations all are common. Geometric earthworks are found with conical mounds. These mounds and earthworks are labor intensive, suggesting a high level of social organization. Other Marksville traits include knives, scrapers, drills, groundstone atlatl weights, plummets, bone awls, fish hooks, and a variety of projectile point type styles.

Settlement systems in place during the Marksville Period indicate a continued dependence on hunting, fishing, and gathering. The main distribution of Marksville sites is found in the Mississippi River Alluvial Valley. The floodplain of the alluvial valley is truncated by elevated remnants of older plains and is bordered by Tertiary and older uplands. The floodplain is inundated seasonally by backwater flooding. Permanent or semi-permanent sites usually are located on higher ground adjacent to the river or to floodplain lakes. Habitations in such sites appear to have been circular, fairly permanent, and possibly earth-covered. Bottomland sites were occupied for shorter periods and probably were related to specific procurement activities.

Maize first appears to have been utilized regionally during the Marksville period (Walthall 1980). Maize and other domesticates supplemented the intensive riverine subsistence orientation (Struever and Vickery 1973). The relative importance of maize agriculture to developments during the Marksville period is unknown, partly due to the emphasis by researchers on ceremonial aspects of the Marksville culture.

Troyville/Coles Creek Period (A.D. 400 - 1200)

Troyville (also called Baytown) is characterized by a transition from Marksville to Coles Creek pottery types (Gibson 1982). Although they sometimes have been viewed as two distinct periods, Troyville and Coles Creek have significant similarities that warrant their study as a single period of Louisiana prehistory. As Belmont (1967) pointed out, "the distinctions between the two are insignificant, and the dividing line between them quite arbitrary." Troyville culture, which emerged around A.D. 400, was named for the now largely destroyed Troyville mound group (16CT7), in Catahoula Parish, Louisiana. As noted, it represents a localized transition from Marksville culture to Coles Creek culture. The presence of truncated earthen pyramid mounds at Troyville is thought to represent evidence of the beginning of Coles Creek culture.

This period saw the advent of a new, sophisticated ceramic complex with a wide range of decorative components. Coles Creek incised pottery, characteristic of this period, exhibits a series of incised lines below the rim of the vessel, with a series of triangles impressed beneath. Other ceramic types include Beldeau Incised, French Fork Incised, Mazique Incised, and Pontchartrain Check Stamped. The number and variety of ceramics at this time point to an increase in size and complexity of the culture:

> . . . there is an increase in the absolute number of components and in the size of corresponding pottery assemblages assignable to the Middle Coles Creek period. This change probably reflects a population increase and a broader range of adaptations to the various settings in the region . . . (Fuller 1985).

The bow and arrow represent a technological advancement that occurred during the early part of the period (Smith et al. 1983).

The end date of Troyville/Coles Creek is set around A.D. 1200. However, there is no sharp division between Troyville/Coles Creek and the cultures that succeeded it. Discussions by Phillips (1970) on the complexities of Baytown ceramics, which have been found to span Marksville, Coles Creek, and later periods, aptly demonstrate this.

Plaquemine Culture (A.D. 1200 - 1650)

The Medora site (16WBR1), described by Quimby (1951), represents the type site of Plaquemine culture. Plaquemine culture was an indigenous development that emerged from a Coles Creek base. The

settlement patterns, economic organization, and religious practices established during the Coles Creek period continued; however, an intensification of agriculture, socio-political structure, and religious ceremonialism occurred. Ceremonial sites with multiple mounds surrounding a central plaza, and dispersed villages and hamlets are typical of this culture (Smith et al. 1983).

Plaquemine ceramics, while clearly derived from the Coles Creek tradition, do have distinguishing features. The Coles Creek techniques of incising and punctating pottery continued, but Plaquemine craftsmen also brushed vessels and engraved them after firing (Smith et al. 1983). Plaquemine Brushed appears to have been the most widespread pottery type. Other types include Harrison Bayou Incised, Hardy Incised, L'Eau Noire Incised, Manchac Incised, Mazique Incised, Leland Incised, and Evansville Punctate. Both decorated wares and plain wares, such as Anna Burnished Plain and Addis Plain, were well-made. Vessel shape, tempering, and paste appear similar to those identified from earlier periods.

Mississippian Period (A.D. 1000 - 1700)

Late during the prehistoric period, the indigenous Plaquemine culture came under the influence of Mississippian culture from the middle Mississippi River Valley. Mississippian culture extended its influence from the upper portions of the Lower Mississippi Valley, across northern Mississippi and western Tennessee, into central North Carolina and north into the Great Lakes region (Haag 1971). Mississippian sites in Louisiana typically are found on the extreme southeast coast and in an isolated pocket in the northeast part of the state (Smith et al. 1983). This Mississippian influence continued to affect the lifeways of inhabitants of Louisiana and Mississippi until contact with European cultures.

Mississippian settlement patterns reflected the diversity of these subsistence activities. The Mississippian subsistence pattern was based upon a three-part strategy: the cultivation of maize, beans, squash, and pumpkins; the collection of local plants, nuts, and seeds; and, fishing and hunting of local faunal species. Major Mississippian sites were located on sandy and light loam soils in the fertile bottomlands of major river valleys. A typical Mississippian settlement consisted of an orderly arrangement of village houses, situated around a truncated pyramidal mound. Mounds were characteristic of Mississippian settlements and served as platforms for temples or for the houses of the elite. Mound arrangements imply community planning, a strategy only possible under a highly organized and complex social system.

Mississippian pottery is distinguished by its shell tempering, a technological innovation that enabled potters to create larger vessels (Smith et al. 1983). Ceramic vessels include globular jars, plates, and bottles, as well as loop- and strap-handled pots. Decorative techniques include negative painting, engraving, and incising; modelled animal heads and anthropomorphic images also were used as adornments. Other Mississippian artifacts include chipped and ground stone tools; shell items such as beads, gorgets, and hairpins; and, copper and mica items.

CHAPTER IV

PREVIOUS INVESTIGATIONS AND ANTICIPATED MARINE RESOURCES

Previous Investigations

Only a few cultural resources investigations have been conducted in the vicinity of the project reach, which is operationally defined as the Mississippi River natural levee within 8 km (5 mi) of the project area. All of these studies have occurred in Louisiana and most consist of pedestrian reconnaissance surveys conducted in the late 1970s. Only limited judgmental subsurface testing was conducted in conjunction with these surveys. Servello (1976) conducted a reconnaissance of the Mississippi River levee between Morville, Louisiana, and Blackhawk, Louisiana. While five historic sites (16CO52 - 16CO56) were recorded during survey, all were located well north of the project reach, i.e., near Fairview, Louisiana.

On April 5 and 6, 1977, Shenkel conducted four reconnaissance surveys for the U.S. Army Corps of Engineers, New Orleans District. These surveys included: (1) survey of a planned downriver extension to the Coochie Revetment (Shenkel 1977a); (2) reconnaissance of a planned levee enlargement between River Miles 315 and 308.5-R (Shenkel 1977b); (3) examination of a planned levee enlargement project area between River Miles 308.5 and 303-R (Shenkel 1977c); and, (4) survey of a planned extension to the Point Breeze Revetment (Shenkel 1977d). Shenkel later surveyed the alignment of a planned levee enlargement between River Miles 320 and 315.5-R (Shenkel 1977e). No archeological sites were identified during any of these surveys.

Neitzel (1978) surveyed the planned Durham Prong Diversion Channel alignment and two boat ramps for the U.S. Army Corps of Engineers, Vicksburg District. The planned diversion channel was located approximately 3.2 km (2 mi) northwest of Jackson Point. One of the boat ramp locations was situated along the Mississippi River across from Jackson Point; the second boat ramp was located along the Red River near Cocodrie Church. No evidence of substantive intact cultural resources was observed during reconnaissance of these three areas.

Two additional surveys have been conducted in the vicinity of the project reach. Shuman and Jones (1988) surveyed the planned corridor of a high power transmission line in Concordia Parish; this survey was conducted for the city of Vidalia, Louisiana. The survey corridor extended from the Sidney A. Murray, Jr., Hydroelectric Plant, near the Old River Control Structure, to approximately 64 km (40 mi) north of the vicinity of Vidalia. A 15.7 km (9.75 mi) long alternate route, which extended northeast from the vicinity of Deer Park, Louisiana, also was examined. Field investigations included a combination of pedestrian survey and judgmental shovel testing. One late historic and modern site was located, the New St. James Cemetery on Moriah Plantation, west of Vidalia. Avoidance of the cemetery, or monitoring of transmission line construction in the vicinity of the cemetery was recommended.

Finally, Jones (1989) surveyed three planned revetment extensions in Concordia and Pointe Coupee parishes. One area, a planned upriver extension to the Above Old River Revetment, was situated approximately 8 km (5 mi) south of the current project area. Field methods included pedestrian survey augmented by systematic shovel testing. No archeological sites were located within the Above Old River Revetment project area. However, two prehistoric sites were recorded north of that project area. The Prairie Lake Mound (16CO28) consisted of a Coles Creek mound site located immediately south of Prairie Lake, approximately 2.4 km (1.5 mi) south of the Outflow Channel. The 32 x 38 m (105 x 144 ft) pyramidal platform mound currently rises 1.3 m (4.3 ft) above the surrounding plain. Morphology of the surrounding ground surface, along with shovel tests placed around the mound, suggest that the living surface of the site lies at an unknown depth below a blanket of post-occupational alluvium. Human cranial and teeth fragments

were recovered from the backdirt associated with a small pothole found at the crest of the mound. Research conducted by Jones demonstrated that the Prairie Lake Mound is the Glendale Landing Mound reported by C. B. Moore in 1911. During his 1911 excavations, Moore recovered 15 human burials from the mound. The site has not been evaluated (Jones 1989).

Jones also recorded the Murray Outflow Channel Midden (16CO29), a Troyville earthen midden with a possible late Marksville component. It was observed eroding out of the bank adjacent to a modern unimproved road that aligns the Outflow Channel. A number of large ceramic sherds were recovered from the site. Since it fell several miles outside of the defined project area, Jones (1989) did not test this potentially significant site.

Two additional sites have been recorded in the vicinity of the project area. Site 16CO21 is situated along the southern bank of the Outflow Channel, adjacent to the Old River Control Outflow Channel Revetment. Surface collection of the site produced 45 gar scales and 2 prehistoric points. The points resembled a Hale and a Kent, suggesting a Late Archaic cultural affiliation. The site has not been tested. Finally, Site 16CO51 is reported on the batture adjacent to Shaw, Louisiana. However, the state site form is not available at this time.

The Potential for Submerged Cultural Resources

While no substantive marine surveys of the project reach have been undertaken, historic records suggest that several submerged vessels may be located in the area. The stretch of the Mississippi River encompassing the project reach was navigated on a regular basis by Europeans as early as the first decade of the eighteenth century. Bateaus, pirogues, and flatboats carried goods, raw materials and passengers up and down the Mississippi throughout the early eighteenth and nineteenth centuries (Pearson et al. 1989). Unfortunately, the loss of these early vessels largely went unreported since there were few newspapers and no official agencies to record these events.

After the introduction of steam navigation to the Mississippi in the early nineteenth century, the reporting of steamboat disasters became somewhat more reliable. As a result, the wrecks that are reported in the project reach date from the period after the introduction of steam. Nevertheless, locational information generally is sketchy at best. Wrecks from this period usually were reported only as being near a given landing or so many miles above or below a particular town. Without any greater precision, it is impossible to eliminate positively any single reach in the project area from having the potential to contain shipwreck remains. In addition, geomorphological studies indicate that the Mississippi River has undergone frequent channel shifts through time, thus raising the possibility that vessel remains may be located on what is presently dry land. While some of these changes can be documented with some certainty, others cannot. As a result, it is not always possible to locate confidently the course of the river for a particular year.

There are six reported steamboat wrecks that are located somewhere in the vicinity of the study reach. These include:

(1) The *Eclipse*, a 168-ton sidewheel steamboat built in Beaver, Pennsylvania, in 1823. The *Eclipse* reportedly snagged and sunk near Black Hawk, Louisiana on August 20, 1826 (Berman 1973; Lytle 1952).

(2) The *Ben Sherrod*, a 393-ton sidewheeler that caught fire and burned on May 8, 1837 with great loss of life. The vessel apparently exploded and sunk ten miles above Fort Adams, Mississippi (Berman 1973; Howland 1846; Lloyd 1856; Lytle 1952; *Woodville Republican* 1837).

(3) The steamer *Black Hawk* sank on December 27, 1837, as the result of a boiler explosion. The vessel was carrying a military payroll. The location of the wreck is a matter of controversy. Some sources claim the site of the wreck is the origin of the name Black Hawk Point (Bragg 1977); others locate the wreck at the mouth of the Red River to the south (Lytle 1952).

(4) The 407-ton *Baltic* collided with the *Maid of Kentucky* and sank near Ft. Adams, Mississippi, on April 1, 1842 (Lytle 1952).

(5) The 323-ton steamer *John L. Avery* snagged and sank on March 9, 1854. Some sources place the wreck near Black Hawk, Louisiana (Bragg 1977), while others identify Ft. Adams, Mississippi, as the scene of the disaster (Berman 1973). One source placed the sinking at New Orleans (Lytle 1952). The lives of some 40 deck passengers were lost as a result of being hemmed in by heavy casks of sugar that blocked their escape (Bragg 1977).

(6) The *Planter* snagged and sank near Fort Adams, Mississippi, on December 30, 1857 (Lytle 1952; Berman 1973).

The remains of other submerged vessels probably are located in the vicinity of the project area, including smaller vessels and abandoned vessels. As a result of these investigations, it is apparent that both the present river course and terrestrial portions of the proposed project area have the potential to contain historic shipwreck remains. However, because of imprecise historic records, the specific locations of these vessels are unknown. In addition, the extensive meandering of the Mississippi River in the vicinity of the project reach suggests that most historic submerged vessels in the area lie deeply buried on the batture within former river alignments.

CHAPTER V

LAND TENURE HISTORY

Introduction

The Palmetto and Coochie Revetments project reach covers an 11 mi stretch of the Mississippi River and includes portions of Adams and Wilkinson counties, Mississippi; and, Concordia Parish, Louisiana. Much of this region falls within the old Natchez District, an area historically important to the development of the Mississippi and Louisiana territories. This chapter includes a general historic overview of the entire project reach, with specific emphasis placed on the two items surveyed in Adams County, Mississippi, and Concordia Parish, Louisiana.

Early Exploration

The Spanish were the first Europeans to explore the Mississippi River region. Survivors of the Pánfilo de Narváez expedition discovered the mouth of the Mississippi River in October 1528. Several years later, Hernando de Soto and his men traveled from Tampa Bay, Florida, across southeastern America, and in the spring of 1541, they reached the Mississippi River south of present-day Memphis. De Soto led his expedition across the river and explored westward, perhaps as far as Oklahoma, before returning to the Mississippi River. He died in May 1542, somewhere along the river between Memphis and Baton Rouge. Historians disagree upon the exact location, but Concordia Parish sources have speculated that De Soto died either on Lake St. John in the northeastern part of the parish or in southern Concordia Parish, near the mouth of the Red River (Calhoun [1932]:2-3; Concordia Parish Development Board [CPDB] ca. 1950:7). The surviving members of the expedition attempted an overland route through Texas to reach the Spanish settlements in Mexico. This overland route proved unsuccessful. The expedition returned to the Mississippi River where they traveled south to the Gulf of Mexico, and finally reached Vera Cruz in September 1543 (Davis 1971:27-28; McLemore 1973:1:91-100).

The Spanish government neglected the lower Mississippi River Valley following De Soto's expedition. Nearly 140 years after De Soto's death, the French, led by René Robert Cavelier, Sieur de la Salle, entered the Mississippi River at its confluence with the Illinois. La Salle traveled downriver to the mouth of the Mississippi, where on April 9, 1682, he claimed all lands drained by the great river for King Louis XIV of France (Davis 1971:28-29; McLemore 1973:1:105-107). Records of the expedition noted that La Salle took possession of Louisiana with the full consent of the Indian tribes encountered along the route, who assured him that his men were "the first Europeans who have descended or ascended the River Colbert [Mississippi] . . ." (Rowland 1925:1:129-130).

Colonial Era

The project region between the Natchez and Pointe Coupée concessions was not affected directly by French colonization. Apparently the only white man to visit that stretch of river was Father Antoine Davion, a Jesuit priest who established a mission among the Tunica Indians in 1698. The mission was located on the east bank of the river, approximately 10 mi above the mouth of the Red River and just below the *Rivière des Innocens*, at a point marked by cartographers as *Roche à Davion,* Davion's Rock, or the Rocks of Davion Valley (Pitts 1979; Ross 1765; Rowland 1925:1:91, 256-259).

Following the 1729 Indian massacres of white settlers at Fort Rosalie (Natchez) and Fort St. Peter (Vicksburg), French colonization of this portion of the Mississippi River came to an abrupt end. France maintained territorial claim, but made no further efforts to settle the region. In 1762, the French government transferred dominion of the Isle of Orleans and the Louisiana territory west of the Mississippi to Spain through the secret Treaty of Fountainebleau. A year later, terms of the Treaty of Paris gave possession of West Florida and French Louisiana east of the Mississippi River to Great Britain (Figure 9) (Audhuy 1989:33-36; Davis 1971:97; McLemore 1973:1:129-130, 133).

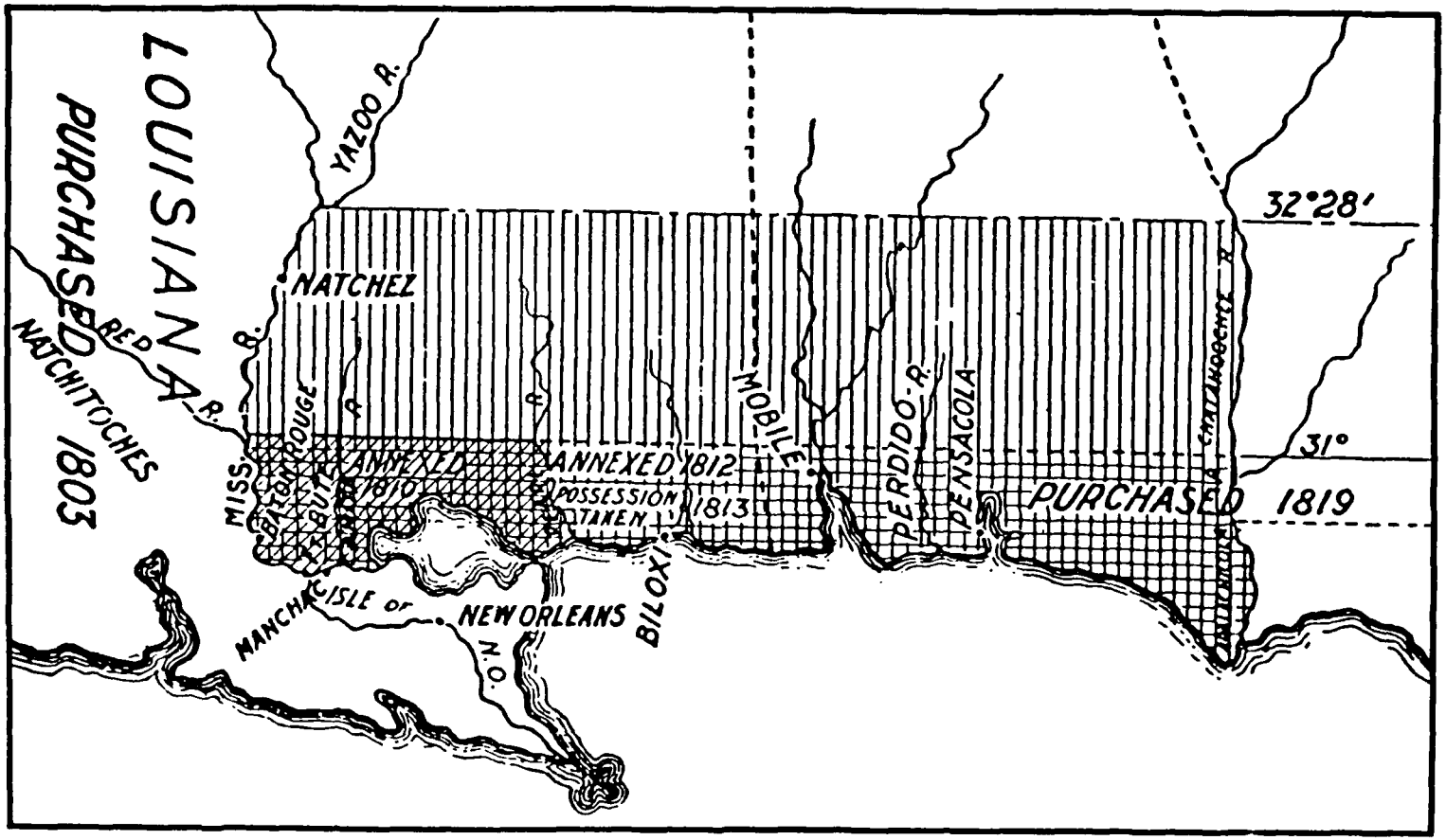
During the British colonial period, the only incident of note near the project reach involved British fortification of the east bank of the Mississippi as a precaution against possible Spanish invasion from the west. In 1765, from his post at Fort Bute on Bayou Manchac, Major Loftus was sent with a detachment of 400 British troops up the Mississippi River to command Fort Chartres in the Illinois territory. At Davion's Rock, Loftus and his men were ambushed from both sides of the river by a large force of Tunica Indians, former allies of the French, who killed Major Loftus and a number of his men. The British re-christened Davion's Rock, Loftus Heights, a name the ambush point held until U.S. occupation of the Natchez District (Rowland 1925:1:256, 259).

The Natchez District was not affected by the American Revolution until Willing's raid of 1778, which was, in fact, the only American armed entry into that region. In 1777, the Commerce Committee of the Continental Congress authorized James Willing, a former Natchez resident, to take a small expeditionary force from Fort Pitt down the Mississippi River. While his original orders are unknown, it has been suggested that Willing was instructed to obtain supplies from New Orleans, to confiscate Loyalist-owned property along the eastern bank of the river, or to secure pledges of neutrality from the West Floridians. Regardless of his official instructions, Willing and his party, based aboard the gunboat *Rattletrap*, looted the territory from Natchez to Manchac and then headed downriver to sell their plunder in New Orleans (James 1968:22-23; Johnson 1971:208-209). William Dunbar, a Scotsman, owned a plantation near Baton Rouge and later moved to the Natchez area; here his properties included Wakefield, which was immediately above the project reach. Dunbar wrote of Willing and the raid in disgust:

> . . . the intention of the Americans was to rob & plunder Every English subject who had property of any value Some few excepted, . . . the Party was commanded by James Willing of Philadelphia, a young man who had left this Country the year before; perfectly & intimately acquainted with all the Gentlemen upon the river at whose houses he had been often entertained in the most hospitable manner, ... Villains, Rascalls. Twould be a prostitution of the name of Americans to honor them with such an apellation [sic throughout] (Rowland 1930:60-63).

Spain entered the Revolutionary War on June 15, 1779, as an ally to the French, whereupon Spanish Governor Bernardo de Gálvez began operations against British West Florida. British forces along the lower Mississippi River surrendered to Gálvez on September 21, 1779. The Natchez District officially became a Spanish province at the end of the war, with the 1783 Anglo-Spanish Treaty of Paris (which left the boundaries of West Florida undefined, reinforcing the Spanish claim northward to the mouth of the Yazoo River), although the region had been under Spanish control since British capitulation to Gálvez in September 1779 (James 1968:25-29; Johnson 1971:212-219; McLemore 1973:1:158).

The overall region does not appear to have been well-populated until after Mississippi was accepted officially as a state. The Spanish colonial period was important to the area, since it was under that regime that cotton emerged as the dominant cash crop of the Natchez District. Natchez planters first planted tobacco, then indigo, and finally turned to cotton cultivation around 1795, after Eli Whitney invented his



BRITISH WEST FLORIDA - Acquired by Great Britain 1763. Boundary of 32° 28' fixed 1767.

SPANISH WEST FLORIDA - Acquired by Spain 1783. Northern Boundary fixed 1795. Pearl-Perdido portion annexed to Mississippi Territory 1812. Possession taken 1813. Perdido-Apalachiola portion acquired by Florida purchase of 1819.

INDEPENDENT STATE OF WEST FLORIDA - Independence won by Revolt. Declared September 26, 1810. Annexed to U.S. by President proclamation, October 27, 1810. Added to State of Louisiana by Act of Congress April 14, 1812.

Figure 9. Map designating British West Florida, Spanish West Florida, and the Independent State of West Florida (Chambers 1898).

cotton gin. Cotton production in the Natchez District skyrocketed from 36,351 pounds in 1794 to over 1,200,000 pounds by 1798 (Ellicott 1803:133-134; James 1968:48-53).

Territorial Era

Spanish dominion of the Natchez District terminated on October 27, 1795, with the Treaty of San Lorenzo, also known as the Pinckney Treaty. This agreement ceded the long-disputed "Yazoo Strip," between the Yazoo River and the thirty-first parallel, to the United States, thereby finally establishing the boundary between U.S. territory and Spanish West Florida (Figure 9). Spain also granted the United States navigation rights on the Mississippi River, as well as the right to deposit goods in the Spanish-held port of New Orleans (McLemore 1973:1:171-172).

Andrew Ellicott was appointed boundary commissioner in 1796 and in 1797, following Spanish-instigated delays, began demarcation of the boundary line between U.S. and Spanish territory along the thirty-first parallel, from the Mississippi River eastward to the Atlantic coast. Ellicott was aided in his survey by Captain Stephen Minor and William Dunbar. Congress established the Mississippi Territory on April 7, 1798, two days before Ellicott left Natchez to begin his survey. Ellicott planned to begin his survey at Clarksville, a few miles below the project reach; however, measurements demonstrated that point was located over 3 mi north of the thirty-first parallel, necessitating a camp move southward to Bayou Tunica, Willing's Bayou as it then was called (Ellicott 1803:138-190; McLemore 1973:1:172-173).

Fort Adams

In 1798, President John Adams dispatched General James Wilkinson and his troops down the Mississippi to establish a fort at Loftus Heights, i.e., the area formerly known as Davion's Rock. Wilkinson immediately renamed the bluffs, Mount Washington, in honor of George Washington, and christened the fort, constructed in 1799 under the engineering supervision of Major Thomas Freeman, for President Adams. Fort Adams served as the southwestern port of entry for the Mississippi Territory until the Louisiana Purchase gave the United States direct entry from the Gulf of Mexico in 1803 (Mississippi Department of Archives and History:n.d.; Pitts 1979).

Fort Adams existed for only a short time, but occupied an important place in history for that brief period. General Wilkinson stated (1803):

> I hold this point to be the door to our whole western country. And while we keep it barred, we shall be able to secure and control the interior -- a consideration paramount to all others and which would justify the abandonment of every inferior object (Carter 1937:216).

It was at this site that General Wilkinson negotiated the 1801 Treaty of Fort Adams with the Choctaw nation, clearly establishing the boundaries of the Natchez District (Figure 10) (Mississippi Historical Records Survey [MHRS] 1942:5). Wilkinson and his troops also were responsible for converting the Natchez Trace from a rough Indian path to a usable road for travelers and transport through Choctaw and Chickasaw country (Daniels 1989:130-139; Federal Writers' Project of the Works Projects Administration [WPA] 1988:84).

During his controversial career, General James Wilkinson, unfortunately, couldn't keep his hand out of scandal. He was implicated in a scheme by Aaron Burr (1805 - 1806) to set up an independent republic in the Spanish-held southwest, but turned against his supposed co-conspirator when Burr was arrested in

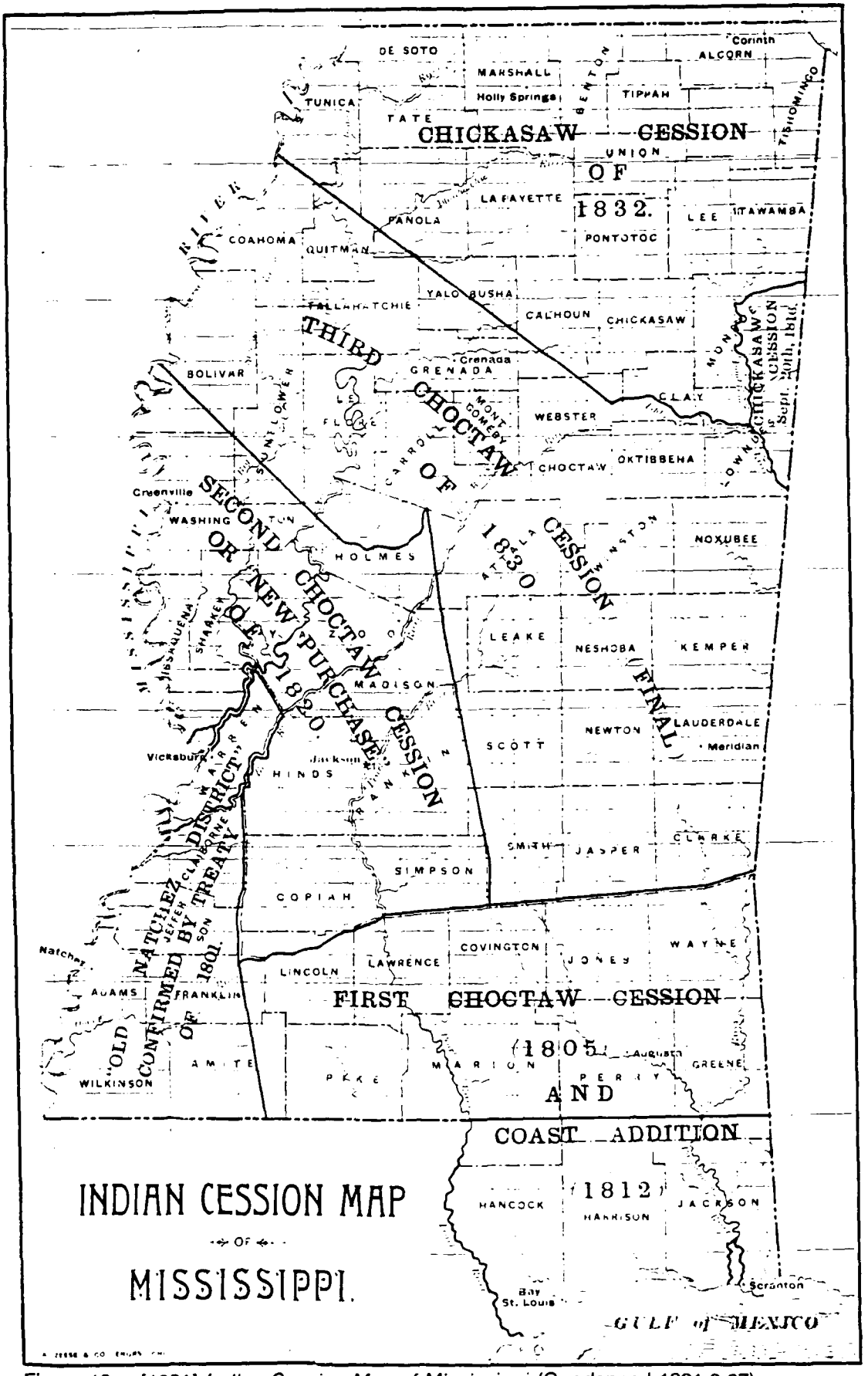


Figure 10. [1891] *Indian Cession Map of Mississippi* (Goodspeed 1891:2:27).

1807 (Rowland 1925:1:414-425; WPA 1988:360). Edward Everett Hale borrowed this scenario many years later when he wrote "The Man without a Country" in 1863. Hale set his fictitious short story at Fort Adams and used the name of Philip Nolan for his central character, a young officer entangled in a treasonous plot against the United States. The real Philip Nolan was an adventurer, wrangler, and protégé of Wilkinson, who held a contract to supply the U.S. Army with captured wild horses from the Spanish southwest. Unfortunately for the authentic Mr. Nolan, who was killed near the Brazos River by Spanish forces while on an 1801 "roundup," his name has become entangled inexorably with that of Hale's fictional character (Hansen 1971:459; James 1968:47, 59; Kane 1947:97-109).

Fort Adams boasted a garrison of approximately 500 U.S. soldiers until troops were transferred to New Orleans following the 1803 Louisiana Purchase. With the Spanish no longer a threat to the Mississippi Territory, there was no need for a fully garrisoned fortification at the former port of entry. Fort Adams existed as a military post until 1810, retaining only a lieutenant and twelve men during its last years. Today, nothing remains of the fort but overgrown brick rubble and a tumbled monument to "The Man without a Country." The community of Fort Adams (originally named Wilkinsonburgh), situated immediately north of the abandoned fort, also has dwindled. Once a small but busy port town, it, too, has been deserted; the Mississippi River has altered its course by about 2 mi, literally leaving Fort Adams "high and dry." It is now a tiny village existing primarily to supply guides and provisions to passing members of the Artonish Hunting Club (William Lucky, personal communication 1992; Bill Martin, personal communication 1992; Pitts 1979; U.S. Department of the Interior 1973).

Antebellum Land Tenure

The project reach apparently was not settled until after 1830. A few government patents were issued prior to that time on both sides of the Mississippi River, but working plantations were not established in the region until around 1833. Most of the early area planters were based in Natchez, a trend that apparently continued throughout the nineteenth century.

Adams and Wilkinson Counties, Mississippi

The Mississippi Territory was divided on April 2, 1799, into two counties, Adams and Pickering. Adams County originally constituted the entire southern portion of the territory, from the Mississippi River eastward to the Alabama/Georgia state line. In January 1802, Wilkinson County was created from that portion of Adams County south of the Homochitto River; county boundaries continued to change through the antebellum period as new counties were formed and borders were defined more clearly (MHRS 1942:14, 15, 135, 149).

Most patents along the east bank of the project reach were granted between 1833 and 1835; by the latter date, tracts were consolidated to form plantations (Land Deed Records, Adams County Chancery Clerk; Mississippi Surveyor General n.d.:T2N and T3N, R5W). Early owners along the lower project reach in Wilkinson County included John Snodgrass, a Natchez merchant, and Dr. Samuel Adolphus Cartwright, Natchez physician, newspaper editor, and college professor (James 1968:121, 176, 233, 248, 271; Land Deed Records, Wilkinson County Chancery Clerk). Their 1,800 - 1,900 ac Goshen Plantation, fronting 1 1/2 mi along the Mississippi River below the Artonish Plantation owned by William Stamp, was conveyed to Thomas L. Dobyns of Jefferson County in 1837. Included in the sale were 20 Negroes, all stock -- horses, cattle, oxen, hogs -- and farming utensils (Land Deed Record [LDR] K:508, Wilkinson County Chancery Clerk).

In Adams County, William Stamps, who owned several tracts in Wilkinson and Adams counties, sold his property above the Homochitto River in Section 13, T3N, R5W, to Paul Pandelly in 1836. Although

Pandelly owned the Homochitto property for only a few years, the tract was known as the Pandelly [later, Pandella] Lands, or Plantation, into the mid-twentieth century. The adjacent plantation to the west was Palmetto Place, or Plantation, apparently cultivated under partnership until 1846 (Land Deed Records, Adams County Chancery Clerk). Included among the Palmetto holders in the 1840s was Judge Edward McGehee, a prominent Woodville planter and textile manufacturer, probably best known for financing the first railroad line in the state of Mississippi (fifth in the United States), the West Feliciana Railroad, in 1831 (James 1968:190; WPA 1988:344). The title history of the Adams County project area that contains portions of the Palmetto and Pandella plantations is depicted in Figure 11. Also noted on the figure is School Section 11, adjoining the northern edge of Palmetto Plantation, which has remained the property of the Adams County Schools since the time of the U.S. government survey (ca. 1829) (Adams County Tax Assessor 1991:Map 138; Mississippi Surveyor General n.d.:T3N, R5W).

By 1839, both Adams and Wilkinson counties appear already to have been dependent upon the planter system. An 1839 survey of the Mississippi River noted that 4,909 whites and 15,665 blacks resided in Adams County, while Wilkinson County listed 3,263 whites and 10,887 blacks. Adams County produced 50,731 cotton bales that year (the Wilkinson County figure was illegible [?8,137 cotton bales]), a sure indication that cotton rapidly was becoming "king" along the river in southwestern Mississippi (Foster 1839).

The owners of Palmetto partitioned the 2,200 ac plantation in 1846, transferring title of the southern portion (Share No. 1) to Sion G. and Elizabeth Rowan, the northernmost portion (the northern half of Share No. 2, a.k.a. Share No. 4) to Edward McGehee, and the central portion (the southern half of Share No. 2, a.k.a. as Share No. 3) to Mary F. and Robert A. Wilkinson of Plaquemines Parish, Louisiana (Figure 12). In July 1854, the Wilkinsons sold their share, which contained a portion of the project area in Sections 12 and 13, T3N, R5W, to George Jonte. Jonte previously acquired (1848) the Rowans' Share No. 1 adjoining the southern line of the Wilkinson tract; the two properties combined to form Jonte's Peach Orchard Plantation. A cotton gin was located along the northern edge of Share No. 1, probably in Section 18, T3N, R5W, well to the south of the project area (Division Real Estate Record 1:387, LDR II:34, LDR KK:234, Adams County Chancery Clerk). That portion of Peach Orchard Plantation has since been scoured by the shifting Mississippi River course and, in fact, exists now as a point bar deposit on the western, or Louisiana, bank of the Mississippi River (Figure 2).

By 1845, the northeastern commercial firm of Brown Bros. & Co. had acquired Loch Levin Plantation (within the Homochitto loop) and Artonish Plantation in Wilkinson County and the Pandelly (later known as Pandella) Lands in Adams County. Artonish by that time extended southward to include the upper portion of the former Goshen Plantation. Brown Bros. sold these adjoining lands in 1847 to David Dunham Withers, who also acquired title to Lochdale (or Lockdale) Plantation, located south of Loch Levin within the Homochitto loop (Figure 13). The 1847 deed listed 79 slaves at Artonish and 96 slaves at Pandelly, Loch Levin, and the Pitcher Lands (exact location of the latter undetermined), along with all horses, mules, cattle, farming utensils, and plantation supplies. By March 13, 1860, when Withers sold his river plantations to John Kingsbury Elgee, an Alexandria, Louisiana, attorney and judge, the total number of slaves for all five properties had grown to 515 (Edmonds 1988:182-183; LDR FF:170, LDR GG:494, LDR MM:496, Adams County Chancery Clerk).

Concordia Parish, Louisiana

That portion of the Louisiana Purchase south of the thirty-third parallel (the present-day Louisiana/Arkansas state line) was established as the Territory of Orleans on March 26, 1804. Following the organization of territorial government several months later, the legislative council divided Louisiana into twelve counties (later to be designated parishes), one of which was Concordia, named for the former Spanish district (Davis 1971:167-168). Prior to U.S. ownership, the Spanish had established a post, ca. 1798 - 1801, opposite the fort at Natchez. The new fortification was named the Post of Concord after the Natchez

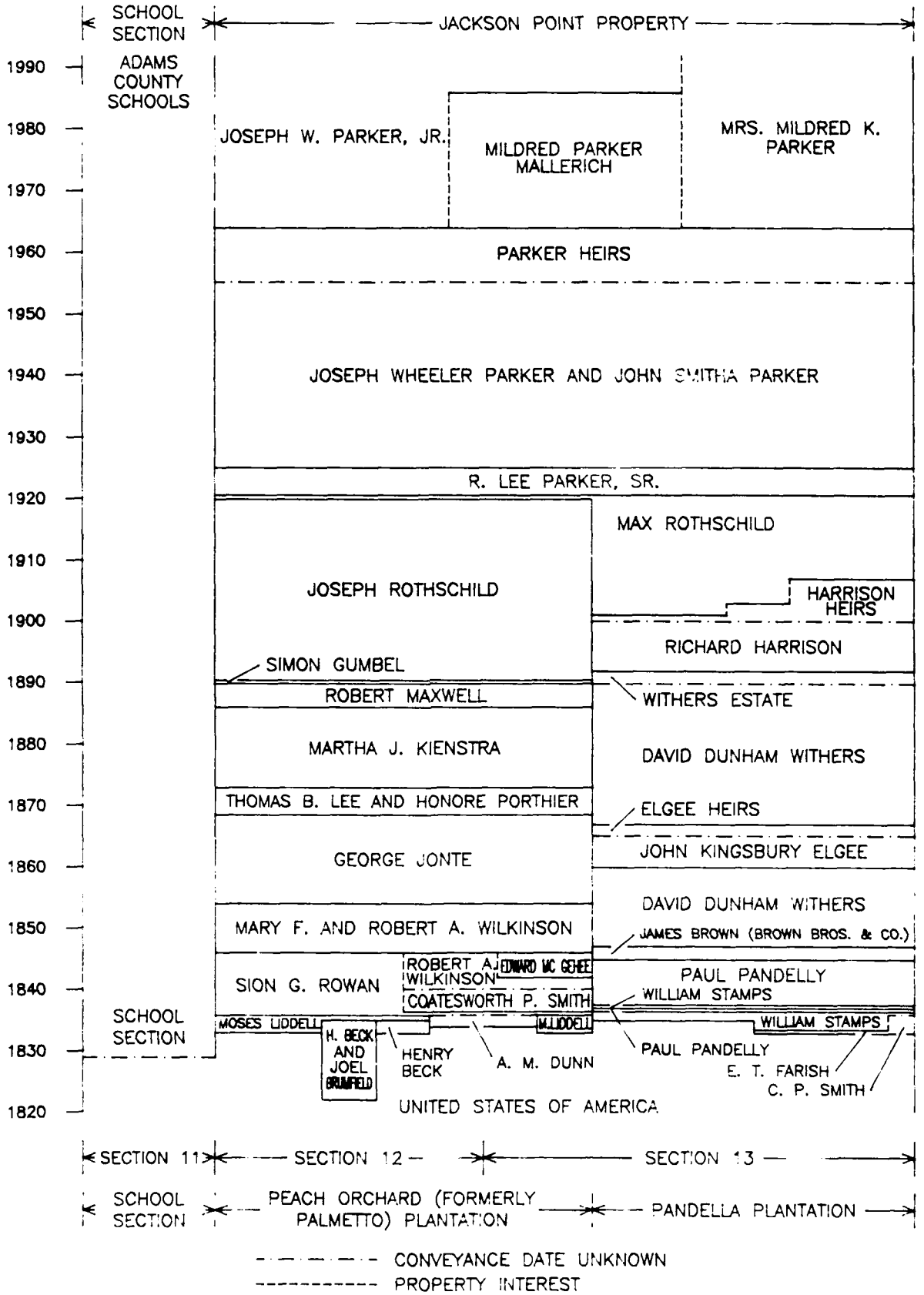


Figure 11. Schematic representation of the general land tenure history of the Palmetto Revetment project item, Adams County, Mississippi.

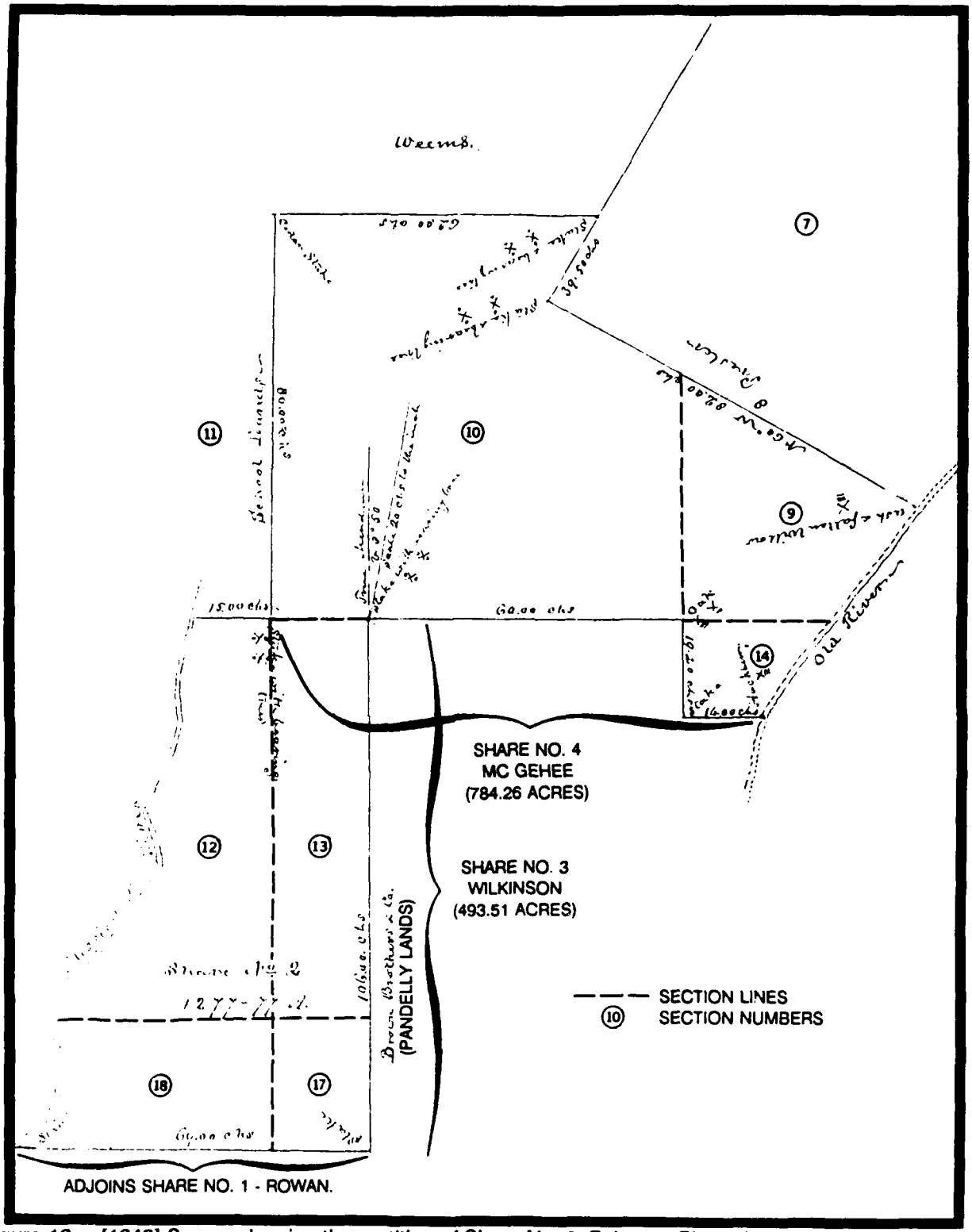


Figure 12. [1846] Survey showing the partition of Share No. 2, Palmetto Plantation, into Share Nos. 3 and 4, with section lines and numbers added (Division Real Estate Record 1:387, Adams County Chancery Clerk).

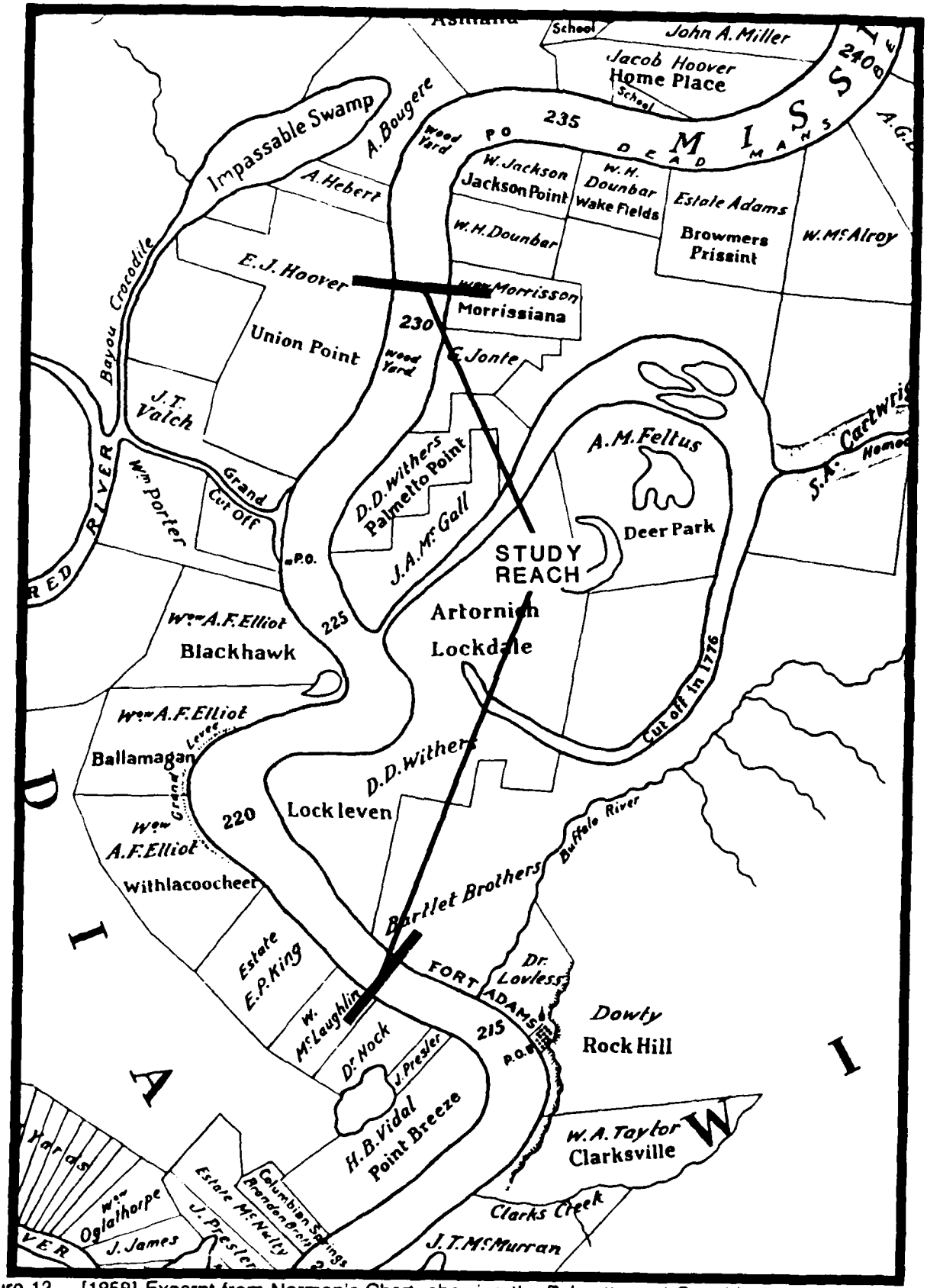


Figure 13. [1858] Excerpt from Norman's Chart, showing the Palmetto and Coochie Revetments project reach.

residence of the Spanish governor. Soon thereafter, the surrounding region became known as Concordia, a name retained for the territorial county. The current parish boundaries were established in 1843 (Calhoun [1932]:10-13, 33-34; CPDB ca. 1950:7-9).

There apparently was little settlement along the west bank of the project reach until around 1830 (Calhoun [1932]:54). Most of the project area was patented by Archibald P. Williams in 1833 (Abstract of Land Entries:13-14, Concordia Parish Clerk of Court). Figure 14 charts the general chain of title for the Concordia Parish project item from the original patents to the present.

Early co-owners of Section 54, below the Williams property, were District Judge Barnabas G. Tenney of Vidalia and James Kempe. Judge Tenney was killed September 6, 1841, in a duel with Charles N. Rowley on Vidalia's riverbank "dueling ground." Rowley disagreed with Tenney's actions regarding the separation suit brought against him by his wife. Mrs. Rowley, previously divorced from Francis S. Girault, apparently was the former Jane Kemp [Kempe], daughter of Captain James Kemp [Kempe]. Sadly, it seems that Judge Tenney was killed for defending the rights of the daughter of his business associate (Conveyance Book [COB] L:80, COB M:7, Concordia Parish Clerk of Court). Approximately four years later, the Louisiana Constitution of 1845 forbade dueling, or assisting in a duel, under penalties of losing the right to vote and to hold office. Private records, however, noted that the Vidalia sand bar continued as a site for settling "matters of honor" for at least another six years (Calhoun [1932]:48, 96-97; James 1968:264-266).

The Tenney and Kempe heirs sold their interests in Section 54 to William St. John Elliot between 1846 and 1851. Elliot also acquired those sections of the project area formerly belonging to Archibald Williams and Edward P. King (COB L:22, 80, 330, 403, 433, 562, COB M:7, Concordia Parish Clerk of Court). William St. John Elliot was a wealthy Natchez planter who transformed his property into a series of highly successful cotton plantations. Like many of the area planters, Elliot and his wife were absentee owners, overseeing business affairs from their Natchez home, D'Evereux. In addition to his own plantation concerns, Elliot also insured many of the major planters' cotton crops, serving for a number of years as president of the Natchez Protection Insurance Company, chartered in 1829 (Davis 1982:27; James 1968:211-212; Kane 1947:194, 199-200).

William St. John Elliot died in 1855, leaving his estate to his wife, Anna Frances Conner Elliot (Kane 1947:201). At the time of his death, the Elliot Concordia Parish estate consisted of three cotton plantations within the project reach: uppermost 2,909.41 ac Black Hawk, 3,163 ac Ballymagan (or Ballamagan), and 1,500 ac Withlacoochie, valued at $34,829.50, $31,664.00, and $9,706.50, respectively (Figure 13). In addition to the real estate, the Elliot plantations listed numerous livestock -- horses, mules, cattle, oxen, hogs, sheep -- wagons, ploughs (30 at Black Hawk, 50 at Ballymagan, 18 at Withlacoochie), and other plantation equipment and furnishings (COB N:10, Concordia Parish Clerk of Court).

The 1860 census listed Anna F. Elliott [sic] as owner of two large plantations. The first, probably Black Hawk Plantation, was listed as having 900 improved and 2,000 unimproved acres valued at $203,000.00. This plantation was worked by 129 slaves, who produced 300 pounds of wool from 67 sheep, 1,000 bushels of Indian corn, and 360 bales (400 pounds each) of ginned cotton. The second listing probably combined both Ballymagan and Withlacoochie plantations, with 1,000 improved and 3,160 unimproved acres valued at $291,000.00. This plantation utilized 148 slaves to cultivate 250 bales of ginned cotton, 1,000 bushels of Indian corn, 2,000 bushels of peas and beans, 100 bushels of Irish potatoes, and 100 bushels of sweet potatoes. Listed livestock totaled 20 horses, 58 asses and mules, 22 milch cows, 48 working oxen, 128 sheep (500 pounds of wool), 96 swine, and 56 cattle for both plantations, generally decreased numbers from the 1856 estate listings (COB N:10, Concordia Parish Clerk of Court; Menn 1964:204-205).

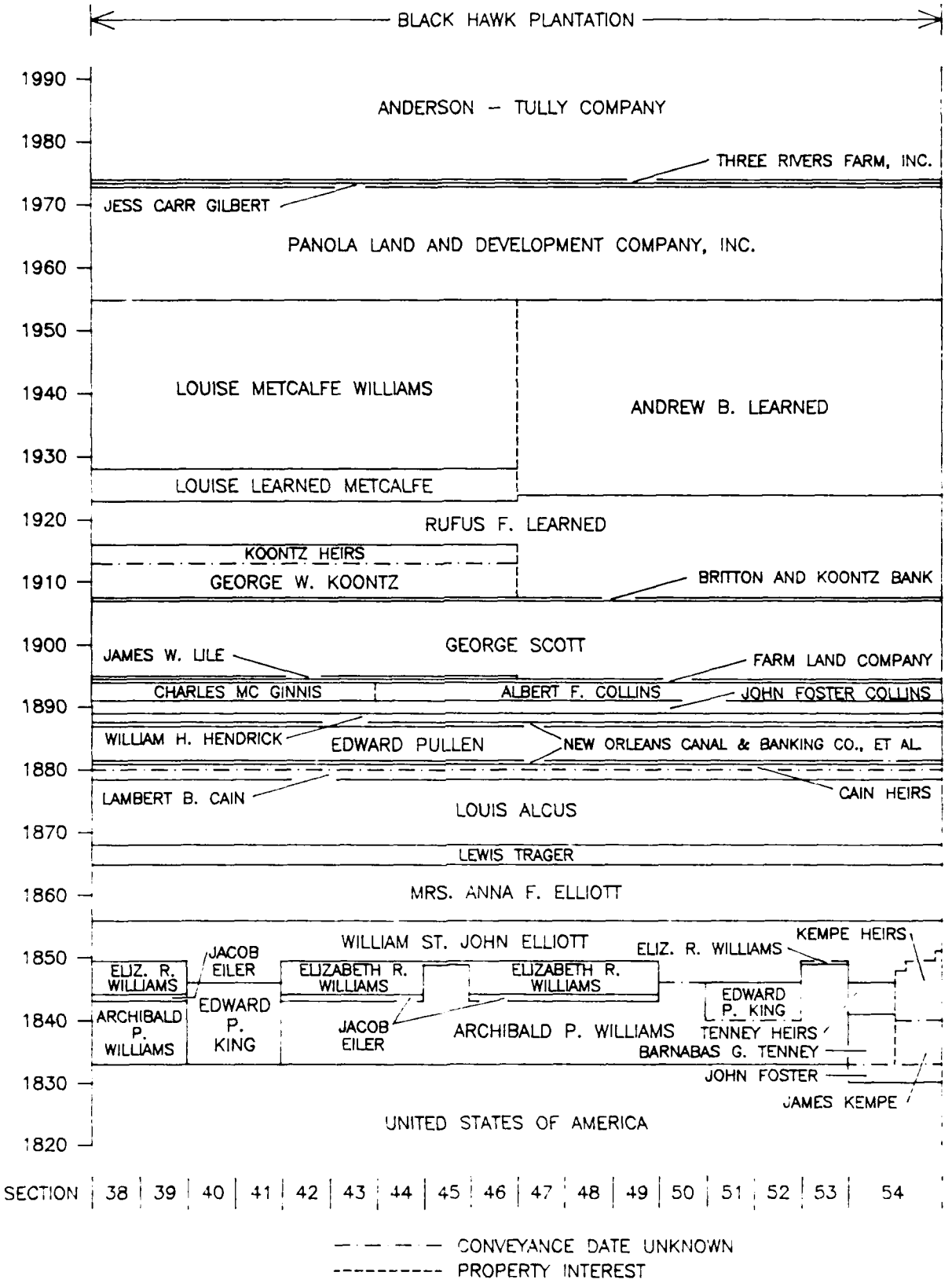


Figure 14. Schematic representation of the general land tenure history of the Coochie Revetment project item, Concordia Parish, Louisiana.

The Civil War

The State of Mississippi seceded from the Union on January 9, 1861. Two days later, volunteer artillery positioned on the Vicksburg bluffs fired a warning shot at the Cincinnati steamer *O. A. Tyler*, the first hostile shot fired in Mississippi. Early in the war, Federal strategy focused on occupation of the Mississippi Gulf Coast. In 1862, though, the Union targeted the western border of the state when their objective shifted to dividing the Confederacy through control of the Mississippi River (McLemore 1973:1:447-448).

There was no significant military action within the Mississippi project reach. Baton Rouge and Natchez surrendered peacefully to Federal forces in May 1862; further activities along that stretch of the Mississippi River were directed toward the capture of Vicksburg. After the fall of Vicksburg on July 4, 1863, the military maneuvers that generally occurred in northern and central Mississippi were associated with General William T. Sherman's devastating march through Georgia and Confederate General John B. Hood's push into the middle Tennessee region (McLemore 1973:1:452-491).

The Concordia Parish project reach, like the Adams-Wilkinson County project reach, saw little Civil War activity. Prior to the fall of Vicksburg, Federal gunboats steamed through the area, but nothing of consequence occurred. A Federal report dated June 8, 1863, did note, however, that there were numerous Confederate forces stationed along the west bank of the river as far south as Black Hawk Plantation (Calhoun [1932]:117-130; CPDB ca. 1950:9).

Postbellum Land Tenure

Although the project reach suffered little, if any, physical damage during the Civil War, the resulting economic effects of the conflict were devastating to the area. Loss of labor and lack of funds combined to break up the plantations along both sides of the Mississippi River (Davis 1982:59-60). On April 17, 1866, Major General Lorenzo Thomas testified before the Joint Committee on Reconstruction in Washington, D.C., concerning the postwar state of affairs in Concordia Parish:

> Was acquainted with many of the planters and others who had been in the "Rebel" army; some of them of high rank, generals, colonels, etc., with whom he [Thomas] has recently conversed. That they were decidedly in favor of coming back into the Union; that they desired to be peaceful and quiet citizens and obey the law . . . . I have been spoken to very freely by those who own plantations they want to lease . . . they say they want Northern men with capital to come there . . . . There are sixteen plantations on Lake Concordia, and only six now cultivated by their owners; the others are leased to Northern men, and one place sold to negroes . . . . There is a great scarcity of labor there, as a large number [of negroes] have gone away . . . . In Concordia this year not more than one acre in ten that was formerly cultivated will be under the plow . . . . The risk [of flooding] is considerable; the levees are not now in good order, and the plantations are liable to overflow at any time (Calhoun [1932]:133-134).

Major General Thomas was a Federal officer who had been stationed at Natchez before and during the Civil War; he became further acquainted with the region and its residents through co-supervision of a Lake Concordia plantation that was leased by his son (Calhoun [1932]:133). Although specific to Concordia Parish, the Thomas report reflected the general condition of the Natchez District following the war.

Adams and Wilkinson Counties, Mississippi

Pandella Plantation. John Kingsbury Elgee apparently was unable to maintain his Mississippi interests following the Civil War. Despite the fact that Judge Elgee had taken an Oath of Allegiance to the Union and was promised protection, his home and considerable possessions in Alexandria were burned by Federal troops in 1864. Destroyed by the Union and rejected by the Confederacy, Elgee died within the next few years (Edmonds 1988:182-183). In late 1867, Artonish, Lochleven, Lochdale, Pitcher, and Pandelly [Pandella] plantations in Wilkinson and Adams counties, Mississippi, were seized from the Elgee heirs and devisees, then sold at Sheriff's Sale to their former antebellum owner, David Dunham Withers (Figure 11). Withers also acquired the accompanying steam gin, quarters, and other improvements on each of the tracts (LDR OO:784, Adams County Chancery Clerk; LDR T:407, Wilkinson County Chancery Clerk).

In 1869, Withers conveyed Artonish and his other Wilkinson County plantations to John Fleming and Hiram M. Baldwin of the Natchez firm of Fleming & Baldwin, then repurchased the properties in January 1877 through Trustee Sale (LDR U:143; LDR AA:194, Wilkinson County Chancery Clerk). Pandella Plantation, however, remained in the name of Withers until November 19, 1892, when the Estate of David Dunham Withers sold the land, consisting then of around 300 ac, to Richard Harrison, who retained title to the property through the turn of the century (LDR 3-H:662; LDR 3-T:171, Adams County Chancery Clerk).

Peach Orchard Plantation. None of the other families within the project items retained their properties after the Civil War. Many formerly successful Natchez District planters simply could not raise the funds to pay property taxes and were forced to forfeit their lands. Others mortgaged their plantations in order to purchase supplies for the upcoming planting season and, as a result, found themselves deeply mired in debt (Davis 1982:124-126; Wayne 1983:84-86). Adjacent to and west of Elgee's relinquished Pandelly lands in Adams County was Peach Orchard Plantation (Palmetto Share Nos. 1 and 3), lost by George Jonte in December 1868 through Sheriff's Sale to Thomas B. Lee and Honore Porthier (Figure 11). Jonte apparently defaulted on loans against the property, but continued to cultivate the land as tenant through 1873 (LDR PP:654; LDR SS:611, Adams County Chancery Clerk).

Lee and Porthier sold the former Jonte plantation on July 18, 1873, to Martha J. Kienstra, wife of George F. Kienstra. Five years later, Mrs. Kienstra also acquired Morrisiana Plantation, adjacent to and north of Peach Orchard and Pandella plantations, in Section 10, T3N, R4W (east of the Adams County project item). The Kienstra family established a store and post office about one-quarter of a mile upriver from the Morrisiana river landing. River action has since destroyed the original store, which was located along the western edge of Section 10 (east of the project item), at the southeastern corner of the school lands in Section 11 (Brieger 1980:4; Cayton 1881:14; LDR SS:611; LDR WW:131; LDR WW:134, Adams County Chancery Clerk). A plat drawn at the time of the Morrisiana sale indicated that all of the property within the Adams County project item was underwater in 1878 (Figure 15).

The Martha Kienstra plantations, Palmetto (Peach Orchard) and Morrisiana, were sold at public auction in March 1886 to Robert Maxwell of New Orleans. Four years later, Maxwell sold the properties to another New Orleans resident, Simon Gumbel, who sold both plantations on that same day (March 5, 1890) to Joseph Rothschild. Rothschild retained title to Peach Orchard Plantation through the turn of the century (LDR 3-A:134; LDR 3-E:210; LDR 3-E:212; LDR 4-H:260, Adams County Chancery Clerk).

Concordia Parish, Louisiana

Black Hawk Plantation. Mrs. Anna F. Elliot, widow of William St. John Elliot, sold the 7,000 ac tract in Concordia Parish -- Black Hawk, Bally Magan [sic], and Withlacoochee [sic] Plantations -- to Lewis Trager on November 7, 1865 (Figure 14). In March 1868, Trager sold all three cotton plantations to Louis Alcus of New Orleans, who retained title to the properties for the next ten years. It was during the Alcus tenure

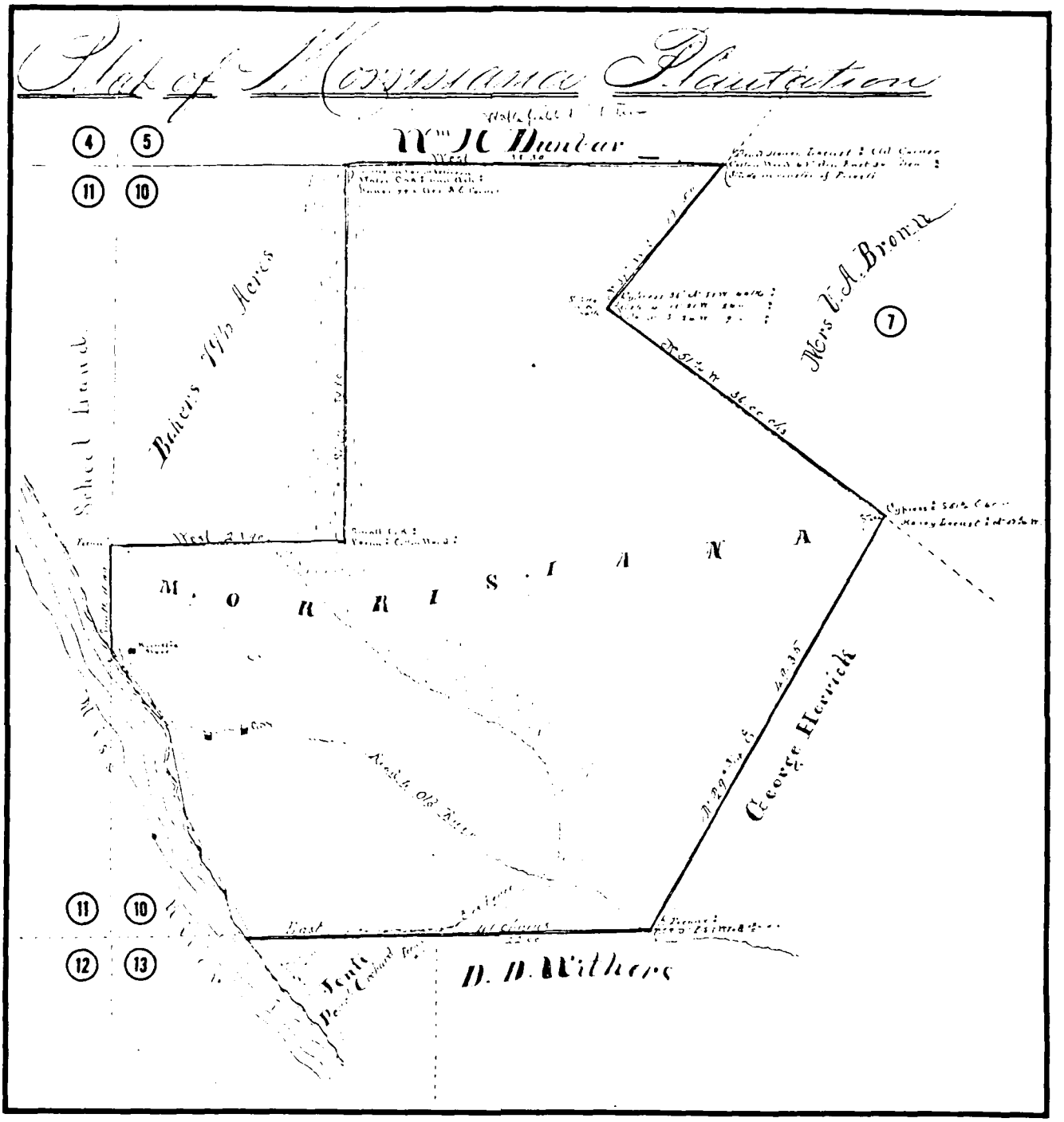


Figure 15. [1878] Plat of the Morrisiana Tract, T3N, R5W, Adams County, Mississippi, with section numbers added (LDR WW:134, Adams County Chancery Clerk).

that the acreage was leased to E. Pullin [Edward Pullen], who later purchased the plantations (COB N:633; COB O:309; COB O:311; COB O:313; COB Q:72, Concordia Parish Clerk of Court).

Louis Alcus lost the three former Elliot plantations to Lambert B. Cain through Sheriff's Sale dated June 3, 1878. Cain died within the next three years; however, his heirs were unable to keep the land. In the summer of 1881, New Orleans creditors seized Black Hawk, Ballymagan, and Withlacoochie plantations to settle debts left by the Cain succession. On November 15, 1881, the New Orleans Canal & Banking Co. and 11 other parties (banks, insurance companies, and individuals) representing the suit against the Cain estate sold the three plantations to former lessee Edward Pullin [sic]. Improvements listed on the properties in 1881 included 12 double cabins and galleries, 4 rooms and brick chimneys in each; 6 single cabins, 2 rooms in each, with galleries and brick chimneys; 1 engine and boiler with pipes; and, 3 gin stands, feeders, and condensers (COB Q:72; COB R:3; COB R:77, Concordia Parish Clerk of Court).

In March 1887, Black Hawk, Ballymagan, and Withlacoochee [sic] Plantations were seized from Edward Pullen and adjudicated at Sheriff's Sale to New Orleans Canal & Banking Co. and nine other banks. One month later, the banks sold all three plantations, along with all buildings and improvements, livestock, agricultural implements, and the "present growing crop," to William H. Hendrick of Natchez. Prior to purchasing the property, Hendrick signed an agreement with Edward Pullen, who was hired as plantation agent and manager. Under the terms of the contract, Pullen was to receive $2.00 per cotton bale produced and shipped throughout the term of his employment. In addition, Hendrick agreed to sell Pullen the three plantations in five years for $51,000.00, plus eight per cent interest; this last clause, however, never was enacted (COB S:246; COB S:265; COB S:719, Concordia Parish Clerk of Court).

On May 15, 1889, William H. Hendrick sold all three plantations to John Foster Collins; included were the buildings and improvements, machinery, agricultural implements, livestock, seeds, corn, fodder, and "the present growing crop." In December 1891, Collins conveyed an undivided one-third interest in the plantations to Charles McGinnis and the remaining two-thirds interest to Albert F. Collins. On January 2, 1894, Collins and McGinnis sold Black Hawk, Ballymagan (split by then into Upper and Lower Ballymagan), and Withlacoochie plantations to the Farm Land Company. Seven months later, the four properties were purchased by George Scott and James W. Lile; the latter almost immediately transferred his property interest to Scott. George Scott retained sole title to the four plantations through the turn of the century (COB T:33; COB U:38; COB U:40; COB U:294; COB U:363; COB U:364COB X:517, Concordia Parish Clerk of Court).

Twentieth Century Land Tenure

Peach Orchard Plantation and Pandella Plantation, Adams County

Joseph Rothschild held title to Palmetto Plantation Shares 1 and 3 (Peach Orchard Plantation) from March 5, 1890, until ca. 1920. Rothschild finally quitclaimed the property to his brother, Max Rothschild, on October 27, 1920, following a series of misleading transactions, at least one of which is missing from the records of the Adams County Chancery Clerk. Max Rothschild already had acquired clear title to adjacent Pandella Plantation nearly 13 years earlier. Rothschild purchased that property from the heirs of Richard Harrison between January 31, 1901, and December 28, 1907 (LDR 3-T:171; LDR 3-V:470; LDR 3-Y:419; LDR 3-Z:935; LDR 4-C:456; LDR 4-C:457; LDR 4-H:260, Adams County Chancery Clerk).

According to a survey filed with the Chancery Clerk, the Adams County project item remained underwater in 1902. In fact, only the northeastern corner of Peach Orchard Plantation (which contained Rothschild Landing) and eastern Pandella Plantation, both in Section 13, had survived the nineteenth century river changes, and all but the northeastern portion of School Section 11 had disappeared. A later survey, filed in 1920, showed the southwestward shift of the Mississippi, creating accretions along the east bank of the river which by then included the formerly submerged project item (Babbit 1902; Babbit 1920).

Max Rothschild conveyed both Pandella and Peach Orchard, along with other area plantations (total of 1,305.61 ac), to R. Lee Parker, Sr., on November 15, 1920. The two plantations were included in January 1925, when Parker sold 11 enormous tracts to Joseph Wheeler Parker and John Smitha Parker. Tract 10, consisting of the Parker-owned portions of Peach Orchard, Pandella, and Morrissanna [sic] Plantations, together with neighboring properties -- Alloway, Jackson Point, Wakefield, Winder, Nochbane, Cerro Gordo, and Black Hills Plantations; the Oakland (or Alleway Quarters) and Baker Tracts; and, the Swamp Lands of the Adams Brothers -- collectively became known as the Jackson Point Property, all in T3 and 4N, R4 and 5W, Adams County. In 1964, the Parker heirs conveyed their interests in the Jackson Point Property to Joseph W. Parker, Jr., Mrs. Mildred Parker Mallerich, and Mrs. Mildred K. Parker. Approximately 22 years later, Mrs. Mallerich transferred her property interest to Joseph W. Parker, Jr., who, with Mildred Parker, still is assessed with Peach Orchard and Pandella Plantations (Adams County Tax Assessor 1991:Map 130; LDR 4-H:269; LDR 4-J:189; LDR 7-O:307; LDR 10-A:355; LDR 17-G:494, Adams County Chancery Clerk).

Black Hawk Plantation, Concordia Parish

George Scott held title to the four Black Hawk plantations -- Black Hawk, Upper Ballymagan, Lower Ballymagan, and Withlacoochie -- from mid-1894 to June 5, 1907, when his property was adjudicated through Sheriff's Sale to the Britton and Koontz Bank. Two days later, the Scott plantations were purchased for $65,000.00 from the bank by its president, George W. Koontz, and Natchez entrepreneur Rufus F. Learned, for an undivided one-half interest each. Nearly 12 years earlier, Koontz had purchased an undivided one-third interest in Artonish Plantation, located in Wilkinson County across the river from the Black Hawk plantations. The Koontz descendants and the Britton and Koontz National Bank eventually acquired sole title to Artonish, which the bank held through 1939. Concordia Parish records indicate that Koontz probably was the son of George Washington Koontz, rather than the original Britton and Koontz partner himself (COB U:150; COB U:364; COB U:602; COB X:517; COB X:540, Concordia Parish Clerk of Court; LDR LL:22; LDR VV:472; LDR VV:568; LDR ZZ:431; LDR 3-I:157; LDR 3-I:162, Wilkinson County Chancery Clerk).

The Britton and Koontz Bank was (and still is) a prominent Natchez institution, which began business as W. [William] A. Britton and Company, a lottery and exchange broker. Britton and Company received its state banking charter in 1835, then was renamed the Britton and Koontz Bank when George Washington Koontz became a partner in the firm in the 1850s. Koontz was one of the top real estate investors in Natchez prior to the Civil War and during that conflict was enlisted by Jefferson Davis to obtain European loans for the Confederate cause. Koontz apparently retained his "magic touch" in banking and real estate, as his company survived the war and subsequent troubles, retaining its status to the present day as an important financial institution in the Natchez region (James 1968:166, 203; Kane 1947:259).

The Koontz heirs quitclaimed their one-half interest in the four Black Hawk plantations to co-owner Rufus F. Learned on August 26, 1916. The Learneds were one of the wealthiest families in Natchez at the turn of the century. Rufus Learned inherited the sawmill business developed by his stepfather, architect Andrew Brown, then expanded the family interests during the postbellum years to include cotton mills, ice companies, railroads, banks, and steamboats (James 1968:207; Kane 1947:133-141; Wilson 1989:150-151). Learned's Black Hawk properties were described in 1916 as totalling 8,403.20 ac in Sections 23 through 61, T2N, R8E, plus land in T1N, R8E, with all accretions and batture. Included in the acquisition were all buildings and improvements, timber and logs, horses, mules, and cattle. Learned held sole interest in the plantations for the next seven years, then sold a one-half interest in the Black Hawk properties on December 18, 1923, to his daughter, Louise L. [Learned] Metcalfe, with reservation of his timber rights. Only three weeks later, he conveyed the remaining one-half property interest to his son, Andrew B. [Brown] Learned for the consideration of $1.00. Rufus Learned died shortly thereafter, leaving his timber interests and several other Concordia Parish properties to his two children (COB Z:523; COB DD:355; COB DD:376; COB EE:67, Concordia Parish Clerk of Court).

Black Hawk, Upper and Lower Ballymagan, and Withlacoochie plantations remained in the possession of the Learned family through the mid-twentieth century. On September 30, 1955, Andrew B. Learned and Louise Metcalfe Williams, heir of Mrs. Metcalfe, sold the acreage to the Panola Land and Development Company, Inc., the president of which corporation was A. B. Learned. Included in the conveyance were numerous other plantations, 2,200 head of mixed cattle, the plantation work stock, and all other livestock on the various properties (COB P-5:375, Entry No. [#] 55865, Concordia Parish Clerk of Court).

The property containing the project item passed out of Learned hands on February 9, 1973, when the Panola company, in a move "to consolidate operations," sold the four properties, by then collectively known as Black Hawk Plantation, to Jess Carr Gilbert. "Sonny" Gilbert, a Catahoula Parish planter and state representative for Concordia and Catahoula parishes, referred to Blackhawk [sic] Plantation as "an invaluable tract of property . . . one of the most historical plantations in the Mississippi River valley" (*The Concordia Sentinel* 1972:1, 7A). Within six months of the acquisition, Gilbert sold the 3,280 ac Black Hawk batture to Three Rivers Farm, Inc., for $1,798,560.00, reserving 15-year hunting and fishing privileges "for himself and eleven persons of his selection." Three Rivers Farm, Inc., held title to the riverfront acreage for only a few months before selling the property to the Anderson-Tully Company of Memphis for a reduced price of $620,000.00, with a vendor reservation of 20-year hunting and fishing rights. Although some of the Black Hawk batture has been sold since the company's January 4, 1974, acquisition, Anderson-Tully has retained possession of the levee-riverfront acreage below Section 22 and above Section 59, T2N, R8E, to the present time (COB 56:100, #119462; COB 61:359, #121268; COB 65:401, #122520; COB 258:455, Concordia Parish Clerk of Court; Concordia Parish Tax Assessor 1991:Ward 4, Rural).

Summary

The Palmetto and Coochie Revetments project reach extends through a rather isolated area of the Natchez District. This is a rural area that history passed through rather than developed. Vast cotton plantations were established in the early nineteenth century along both sides of this stretch of the Mississippi, but postbellum financial ruin converted the individual cotton empires to corporate-owned planting operations. Today, the project reach remains an important part of "cotton country;" however, changes in the course of the Mississippi have pushed the cultivated fields away from both sides of the river, leaving behind terrain well-suited to hunting and fishing. The project items themselves are situated in areas so scoured by prior river activity that little, if anything, can be expected to remain.

CHAPTER VI

FIELD METHODS, RESULTS, AND RECOMMENDATIONS

Introduction

Archeological survey was conducted at both the Palmetto and Coochie Revetment project items (Figures 1, 2, and 3). This survey was designed to locate, identify, and assess all cultural resources situated within the two project items. Because of the extensive historic riverine meandering that had occurred within the project reach, a preliminary reconnaissance of the two items was completed prior to conducting the systematic field survey within the area. Data concerning both project items were collected during the initial reconnaissance-level investigation to provide sufficient information to develop appropriate field methods suitable for identifying archeological resources within the two project items. No historic standing structures were located in either item. In this chapter, the results of the field investigations conducted at the Palmetto and Coochie Revetment project items are presented separately. The preliminary reconnaissance conducted at each project item is discussed, followed by a discussion of field methods, and the results of these field investigations. This chapter also includes Summary and Management Recommendations sections.

Palmetto Revetment Project Item

The Palmetto Revetment project item extends upriver beyond the previously constructed Palmetto Revetment, from Range U-190 to Range U-110 (River Mile 326.1 - 324.5-L) (Figures 1 and 2). It measures approximately 2,835 m (9,300 ft) in length and approximately 122 m (400 ft) in width. The proposed corridor originates at the Low Water Reference Plane (LWRP) and extends landward.

Preliminary Reconnaissance

Preliminary archeological reconnaissance of the Palmetto Revetment project was completed on April 10, 1992. This consisted of pedestrian survey of the area, as well as three auger tests. The results of the reconnaissance are discussed below.

The Palmetto Revetment project item consists of two distinct segments. The downriver segment measures approximately 565 m (1,850 ft) in length (Figure 2). It lies in a fallow field and consists of nearly level, relatively high land; it is suitable for farming. The segment is bisected by a few shallow drainages and overlaps the northern end of the previously constructed Palmetto Revetment. The bankline is irregular, and in places vertical, further evidence of continued bankline cutting. The landform appears old enough to contain both late prehistoric and historic cultural deposits.

During the reconnaissance, two auger tests were placed within the downriver portion of the Palmetto Revetment project (Figure 16). Auger Test Pre-P1 was placed in a field located approximately 15 m (50 ft) southeast of woods that lie at the northwestern end of the downriver segment. The resulting auger test profile contained five strata (Figure 17). Stratum I consisted of 2 cm (0.8 in) of 10YR 3/2 very dark grayish brown clay loam overlying Stratum II, a 3 cm (1.2 in) thick deposit of 10YR 4/3 dark brown silty fine sand with 10YR 5/3 brown silty fine sand mottles. Strata I and II represent modern alluvial deposits. Between 5 and 40 cm below ground surface (cmbs) (2 and 15.7 in below ground surface [inbs]), a layer of 10YR 4/3 dark brown silty fine sand was encountered (Stratum III). This rested on an approximately 55 cm (21.7 in) thick layer of 10YR 3/2 very dark grayish brown clay mottled with 10YR 3/6 dark yellowish brown clay (Stratum IV). At approximately 95 cmbs (37.4 inbs), this stratum graded into Stratum V, a 10YR 4/1 dark

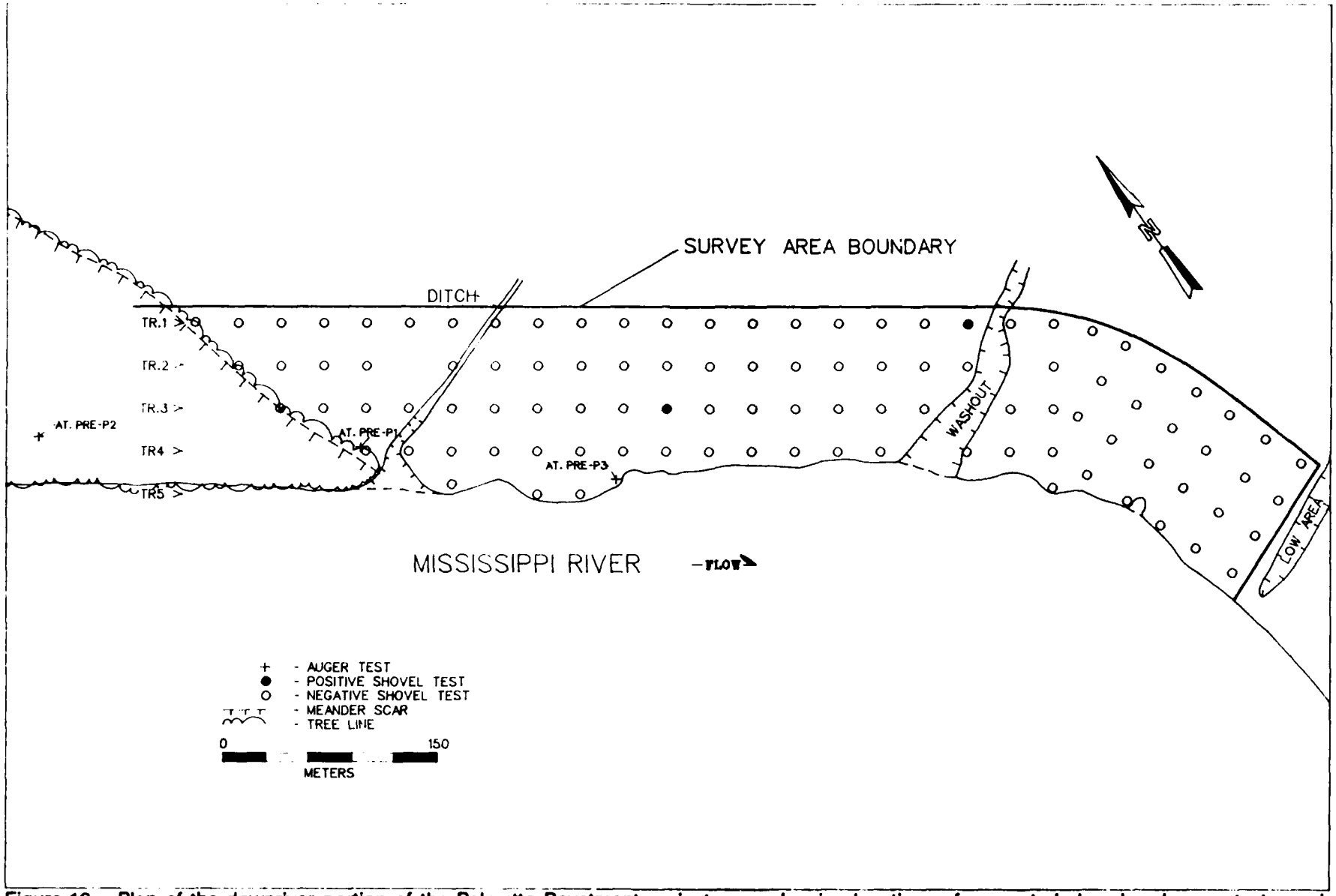


Figure 16. Plan of the downriver portion of the Palmetto Revetment project area, showing locations of excavated shovel and auger tests, and landscape features.

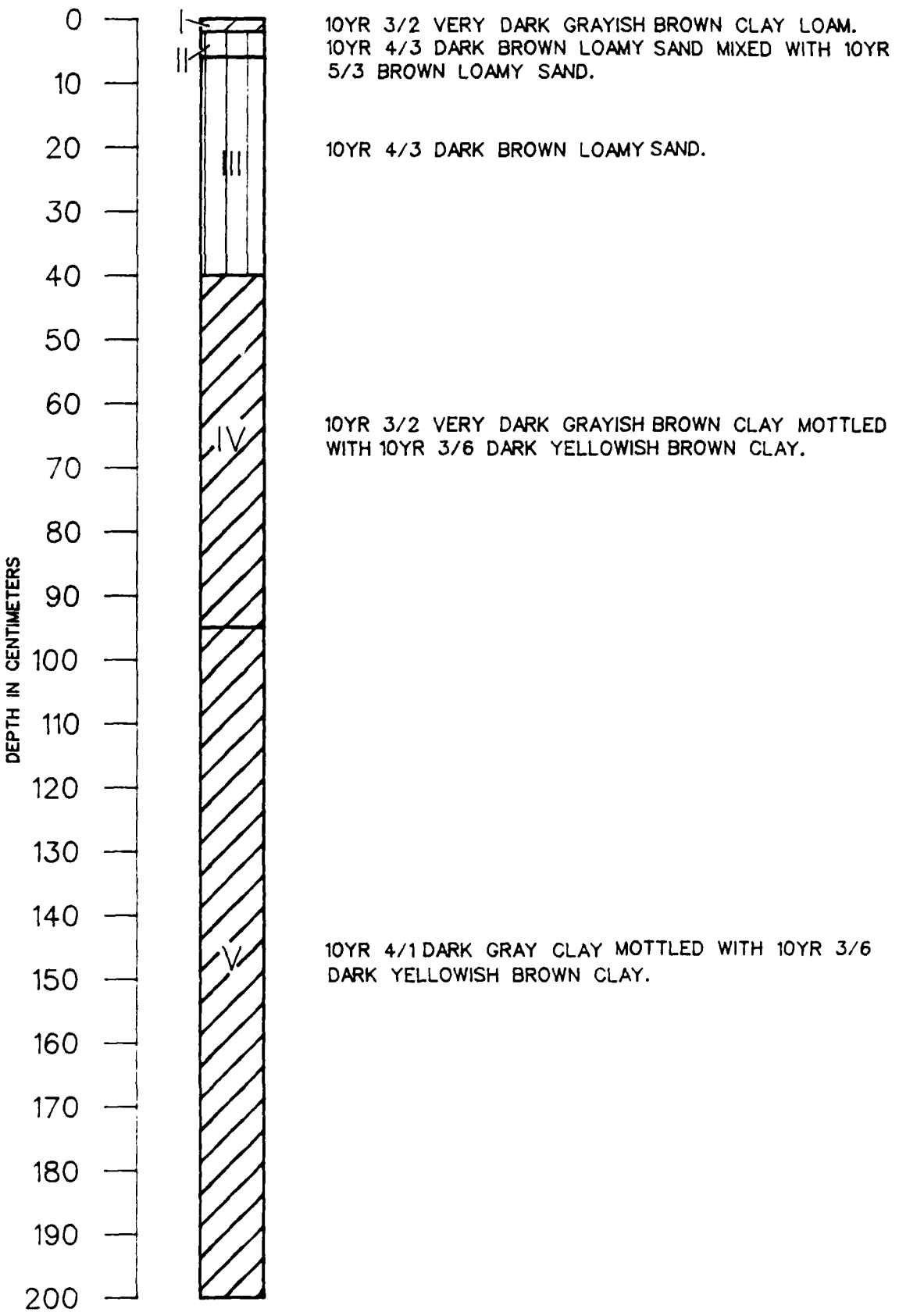


Figure 17. Stratigraphic soil profile of Auger Test Pre-P1, within the Palmetto Revetment project item.

gray clay mottled with 10YR 3/6 dark yellowish brown clay. Excavation of the auger test was terminated at 150 cmbs (59.1 inbs) because of the hardness of the clay deposits. No evidence of cultural deposits was observed within this auger test.

Auger Test Pre-P3 was excavated approximately 150 m (492 ft) downriver from Auger Test Pre-P1, and approximately 10 m (33 ft) from the Mississippi River bankline (Figure 16). This auger test contained four strata (Figure 18). The upper 9 cm (3.5 in) of this auger test, Stratum I, consisted of alternating bands of 10YR 3/2 very dark grayish brown silty clay loam and 10YR 5/3 brown silt loam. These alternating depositional bands probably were formed by modern alluvial deposition. The stratigraphic profile between 9 and 30 cmbs (3.5 and 11.8 inbs) consisted of Stratum II, a 10YR 3/2 very dark grayish brown silt loam; the lower 8 cm (3.1 in) formed a gradation zone with the underlying stratum. Stratum III, a 10YR 4/1 dark gray clay mottled with 10YR 3/4 dark yellowish brown clay extended from 30 to 150 cmbs (11.8 to 59.1 inbs); the lower 20 cm (7.9 in) in the stratum graded into a silt loam. The basal stratum, Stratum IV, was located between 150 and 205 cmbs (59.1 and 80.7 inbs); it consisted of 10YR 4/2 dark grayish brown silt loam. No evidence of cultural deposits was observed within Auger Test Pre-P3.

The remaining upriver portion of the Palmetto Revetment project item consists of approximately 2,270 m (7,450 ft) of undeveloped woodland (Figure 2). The area is characterized by ridge and swale topography and a few narrow, linear lakes. It is demarcated from the southern portion of the project area by woods and by a clear elevation drop of approximately 1 m (3.3 ft). The current ground surface, with its sparse growth, minimal leaf litter, and shallow depressions around tree trunks, clearly represents modern alluvial deposits. An approximately 2.5 m (8.2 ft) wide stream, which drains the largest of the lakes in the area, flows into the Mississippi River approximately 190 m (623 ft) upriver from the large overgrown field.

One auger test was excavated within a wooded area (Figure 16). Auger Test Pre-P2 contained five strata (Figure 19). Stratum I consisted of 15 cm (5.9 in) of 10YR 3/2 very dark grayish brown clay loam. This capped a 19 cm (7.4 in) thick deposit of 10YR 4/2 dark grayish brown sandy loam (Stratum II). The remainder of the stratigraphic profile, from 34 to 240 cmbs (13.4 to 94.4 inbs), consisted of alternating bands of clay loams and sandy loams. Stratum III extended from 34 to 60 cmbs (13.4 to 23.6 inbs); it contained 10YR 3/2 very dark grayish brown clay loam banded with 10YR 4/4 dark yellowish brown fine sandy loam. From 60 to 200 cmbs (23.6 to 78.7 inbs), the auger test contained Stratum IV, a 10YR 4/3 dark brown sandy loam and 10YR 4/2 dark grayish brown clay loam banded with 10YR 3/2 very dark grayish brown clay loam and 10YR 4/4 dark yellowish brown fine sandy loam. The water table was encountered at approximately 130 cmbs (51.2 inbs). The final excavated stratum, Stratum V, extended from 200 to 240 cmbs (78.7 to 94.5 inbs); it consisted of 10YR 4/1 dark gray clay loam banded with 10YR 4/3 dark brown sandy loam. The observed stratigraphic sequence is consistent with one formed by the annual deposition of riverine alluvial deposits.

This portion of the project area consists of modern alluvial deposits situated in a meander scar of the Mississippi River (Figure 2). This conclusion is based on both physical and cartographic evidence. The ridge and swale topography, and the narrow, linear lakes, are typical of aggrading riverine landforms. In addition, Auger Test Pre-P2 exhibited over 2 m of banded alluvial deposition. The 1967 USGS 15' series Artonish, Mississippi - Louisiana topographic quadrangle depicts the area within the 1918 meander line of the Mississippi River. A ca. 1878 plat of nearby Morrisiana Plantation also depicts the modern wooded portion of the Palmetto Revetment project item as lying within the Mississippi River channel. Based on the available information, the upriver portion of the project item consists entirely of modern alluvial deposits. With the possible exception of submerged riverine resources, such as submerged or buried vessels, no potentially significant cultural resources should occur within that portion of the Palmetto Revetment project item.

Finally, the planned downriver extension to the Palmetto Revetment, between River Miles 319.2 - 318.5-L (Appendix I), is comprised of late historic and modern deposits. As depicted on the 1967 USGS

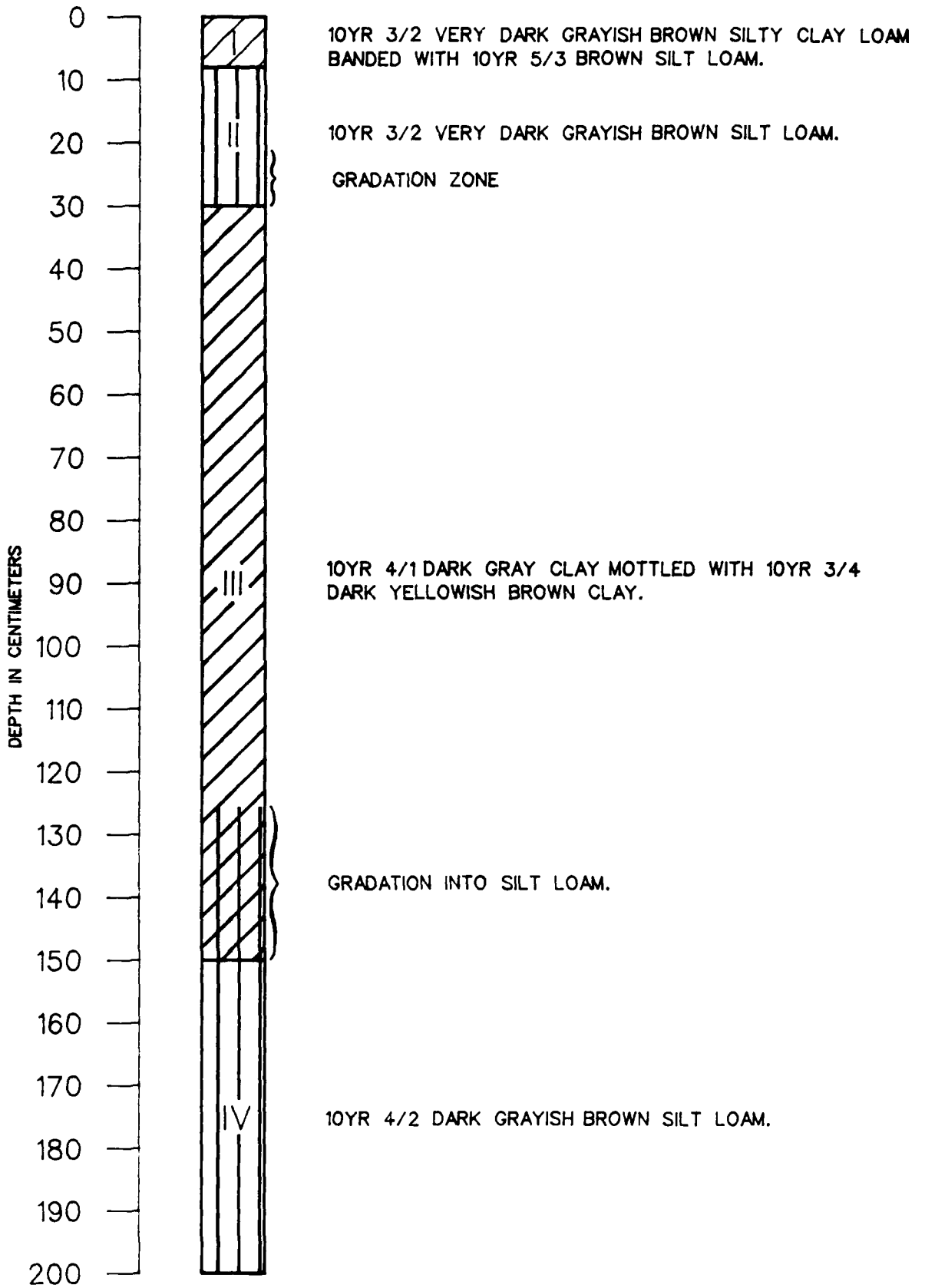


Figure 18. Stratigraphic soil profile of Auger Test Pre-P3, within the Palmetto Revetment project item.

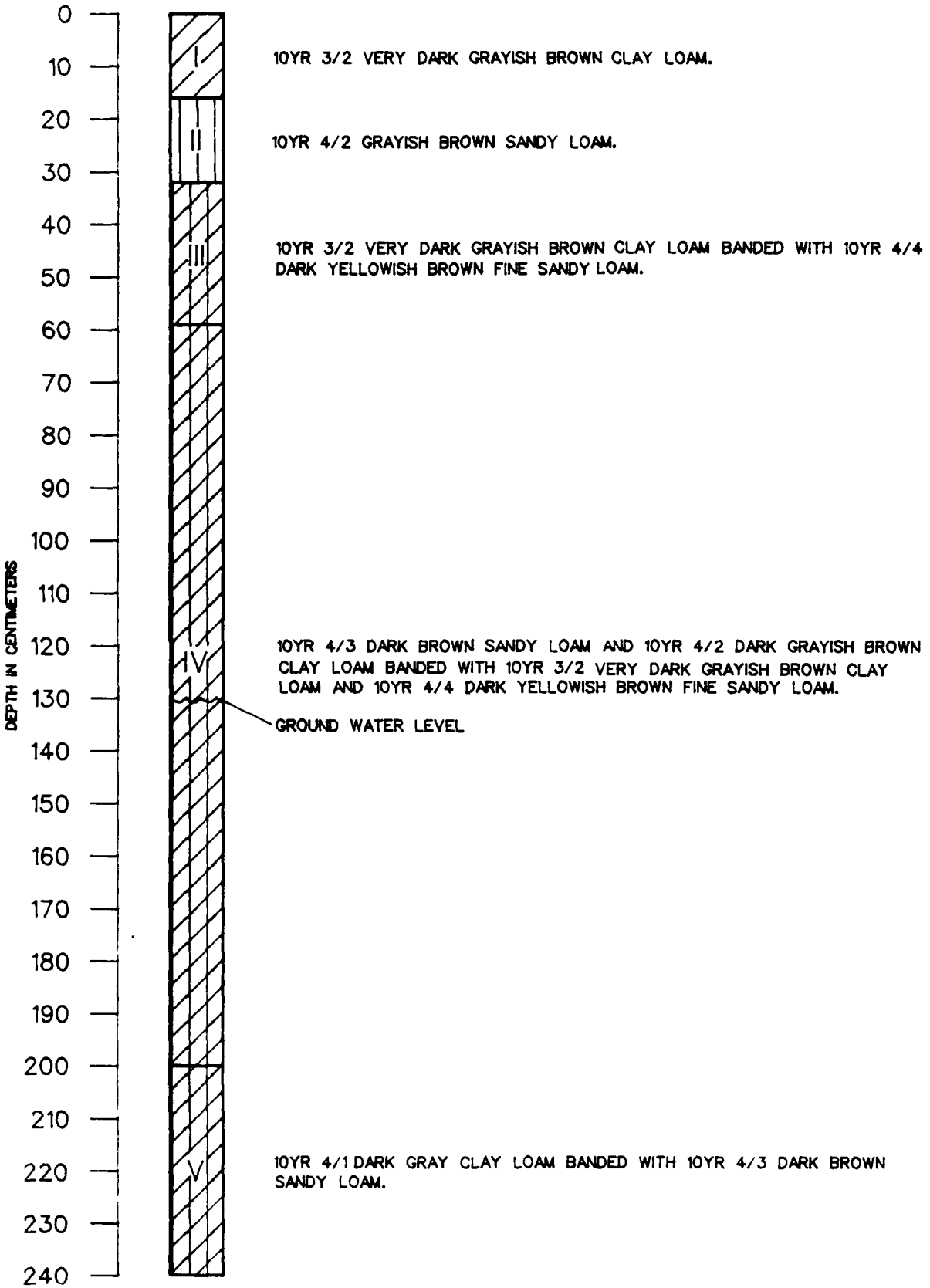


Figure 19. Stratigraphic soil profile of Auger Test Pre-P2, within the Palmetto Revetment project item.

15 minute series topographic quadrangle, Artonish, Mississippi - Louisiana, that area corresponded to the course of the river at least during the 1890s through the 1910s. Because of the recency of these deposits, no substantive archeological deposits are anticipated in the area, and no additional archeological testing of this portion of the project item is recommended.

Field Methods

Based on data collected during the preliminary reconnaissance and consultation with the COTR, the following field methods were employed during the systematic archeological survey of the two project items. No additional archeological survey was conducted within the upriver portion of the Palmetto Revetment project item, since deposits in that area postdated ca. 1918. Within the downriver portion of the item, an area measuring approximately 565 x 122 m (1,850 x 400 ft) was examined through pedestrian survey and systematic shovel testing. Shovel tests were excavated at 30 m (98 ft) intervals along four parallel transects (Transects 1 - 4) spaced 30 m (98 ft) apart. Additional shovel tests were placed along a fifth transect (Transect 5) in those areas where the irregular bankline widened appreciably (Figure 16). Shovel tests were excavated to a depth of 30 to 50 cmbs (11.8 to 19.7 inbs) and into culturally sterile deposits. Excavated soils were screened through 0.6 cm (0.25 in) wire mesh to ensure artifact recovery. Recovered materials were bagged by area, transect, shovel test number, and depth. All shovel tests were backfilled immediately upon completion of the archeological recordation process. Finally, a pedestrian survey was completed to identify cultural materials eroding out of the bankline.

Results of the Field Investigations

During survey of the Palmetto Revetment project item, a total of 102 shovel tests were excavated along five transects placed downriver from the ca. 1918 meander scar (Figure 16). Transect 1, Shovel Test 6 contained a typical stratigraphic profile. Stratum I, the top 4 cm (1.6 in) of the shovel test, consisted of 10YR 4/3 dark brown silt mottled with 10YR 6/3 light brown silt; it apparently represents modern alluvial deposits. Stratum, from 4 to 20 cmbs (1.6 to 7.8 inbs), was comprised of 10YR 3/2 very dark grayish brown silty clay loam. It represents a plowzone layer. Stratum III extended from 20 cm (7.8 in) below surface to the excavated base of the shovel test at approximately 37 cmbs (14.6 inbs). Stratum III contained a 10YR 4/1 dark gray clay loam mottled with 10YR 4/4 dark yellowish brown clay loam. It represented the apparent culturally undisturbed subsoil.

Only two of the shovel tests contained cultural materials. One shovel test (Transect 3, Shovel Test 10) contained a single machine-made light green bottle glass fragment from an apparent modern soda bottle. A second shovel test (Transect 1, Shovel Test 19) located approximately 220 m (721 ft) to the east of Transect 3, Shovel Test 10 contained a few small brick fragments. In addition, a few brick fragments were observed within a washout located approximately 40 m (131 ft) southeast of Transect 1, Shovel Test 19. No additional potentially historic material was observed or recovered from the Palmetto Revetment project item.

Moderate amounts of charcoal and burned earth nodules were observed within the plowzone stratum throughout much of the surveyed field. These materials apparently reflect clearing of the field through burning. Based on USGS topographic maps of the area, the downriver portion of the Palmetto Revetment project item was wooded at least into the 1960s. It subsequently has been cleared and currently represents a somewhat overgrown meadow. The observed archeological evidence suggests that the woods were felled (logged?) and the debris piled and burned. The field then was cultivated for several years, distributing the burned earth and charcoal throughout much of the field. These materials are not associated with potentially significant prehistoric or historic utilization of the property.

During the April 10, 1992, reconnaissance of the Palmetto Revetment project item, field personnel informally interviewed Mr. James H. Swinny of Natchez, a gentleman in his 60s and a local landowner. According to Mr. Swinny, the Kienstra Landing formerly was located in the vicinity of the downriver portion of the Palmetto Revetment project item, while Pandella Landing was located downriver from the Palmetto Revetment project item. Both landings included commissaries; the Kienstra Landing commissary represented the smaller of the two. Mr. Swinny stated that both landings, including the commissaries, were lost to riverine meandering (James H. Swinny, personal communication 1992). During field survey, no evidence of the landing, with the possible exception of a few scattered brick fragments, was observed on the ground surface, within shovel tests, or along the cut bank of the Mississippi River. This negative evidence is consistent with Mr. Swinny's recollection that the Kienstra Landing, including its apparent commissary, was destroyed by riverine meandering. No substantive archeological deposits were located within the Palmetto Revetment project item.

Coochie Revetment Project Item

The Coochie Revetment project extends upriver from the previously constructed Coochie Revetment, between Ranges U-100 and U-50 (River Miles 319.3 - 318.3-R) (Figures 1 and 3). The current project is designed to extend the revetment approximately 1,576 m (5,170 ft) along the Mississippi River, along a corridor extending 122 m inland from the LWRP of the Mississippi River.

Preliminary Reconnaissance

Preliminary field reconnaissance of the project item was conducted on April 9, 1992. At that time, the project area was examined visually, and one auger test was excavated towards the downriver end of the project item. The results of this reconnaissance are presented below.

The Coochie Revetment project also consisted of two distinct landforms (Figure 3). Approximately 550 m (1,804 ft) of the downriver portion of the project item consisted of relatively high, drained woods. Much of that area exhibited considerable disturbance and land clearing attributable to the construction of oil wells and related facilities.

During field reconnaissance, one auger test, Auger Test Pre-C1, was placed in a wooded, apparently undisturbed portion of the area (Figure 20). This auger test contained five strata (Figure 21). The upper 40 cm (15.7 in) of the auger test contained 10YR 3/2 very dark grayish brown silt loam heavily mottled with 10YR 3/2 very dark grayish brown clay loam and 10YR 5/2 grayish brown silt (Stratum I). The underlying Stratum II consisted of a 10YR 3/4 dark yellowish brown sandy loam mottled with a 10YR 4/2 dark grayish brown sandy loam; it was identified between 40 and 49 cmbs (15.7 and 19.3 inbs). This rested on Stratum III, a 5 cm (2 in) thick deposit of 10YR 3/2 very dark grayish brown silty clay loam. This mixing and layering of silts, silt loams, sandy loams, and clay loams clearly suggests the soils lack good integrity; rather, they apparently represent sediments deposited during seasonal flooding within the area.

Between 54 and 80 cmbs (21.3 and 31.5 inbs), Auger Test Pre-C1 contained a 10YR 3/4 dark yellowish brown sandy loam and 10YR 5/2 grayish brown sandy loam (Figure 21). These Stratum IV soils graded into Stratum V, a nearly homogeneous 10YR 4/2 dark grayish brown sandy loam, which extended from 80 cmbs (31.5 inbs) to the base of the auger test, at 200 cmbs (78.7 inbs). No evidence of cultural deposits was observed within the auger test.

This downriver portion of the Coochie Revetment project lies on the batture of Ballymagan Plantation, which subsequently was incorporated into Black Hawk Plantation. Based on the available cartographic data, including the original land claims map, and the 1967 USGS 15' series Artonish,

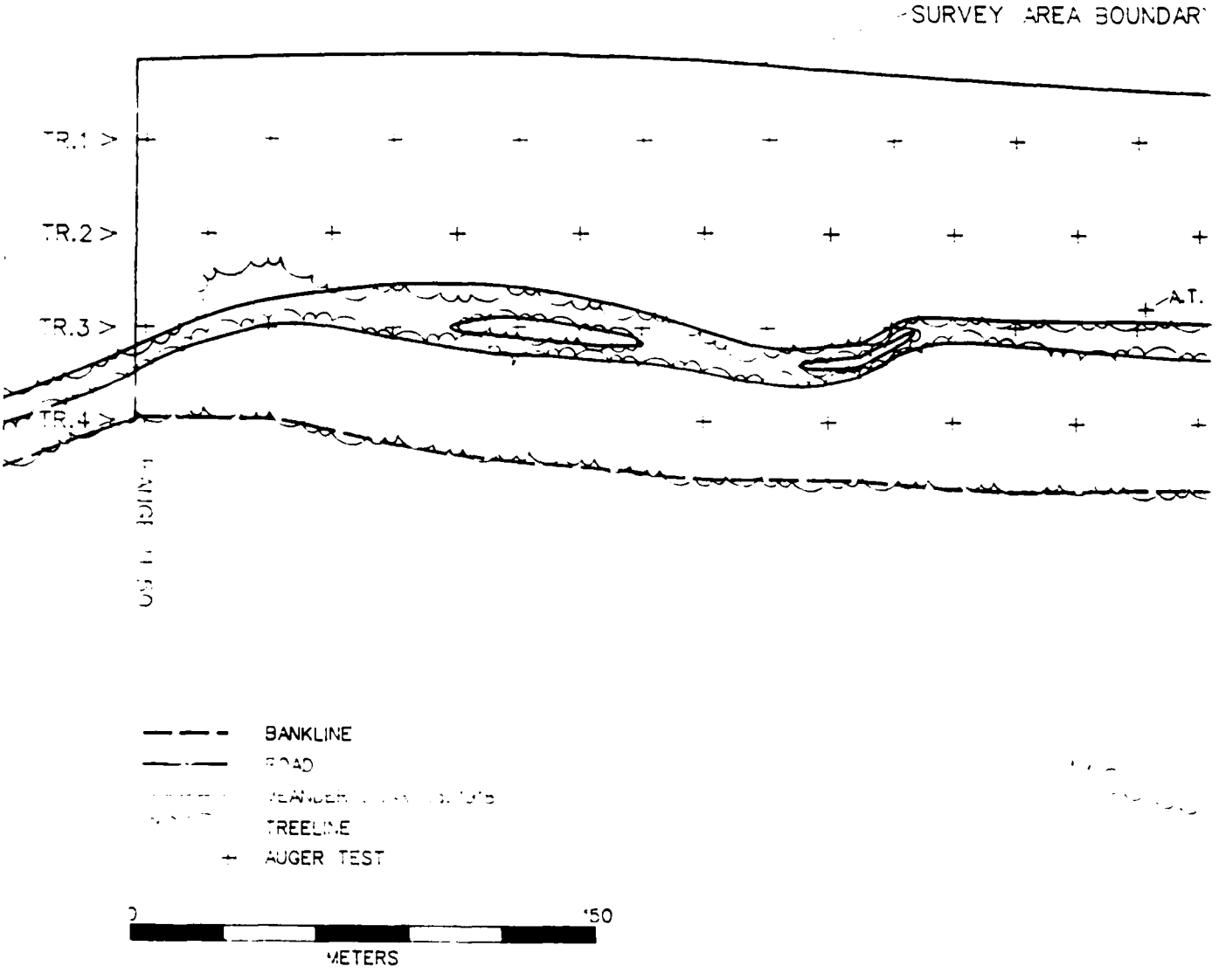


Figure 20. Plan of the downriver portion of the Coochie Revetment project item, showing locations of excavated auger te

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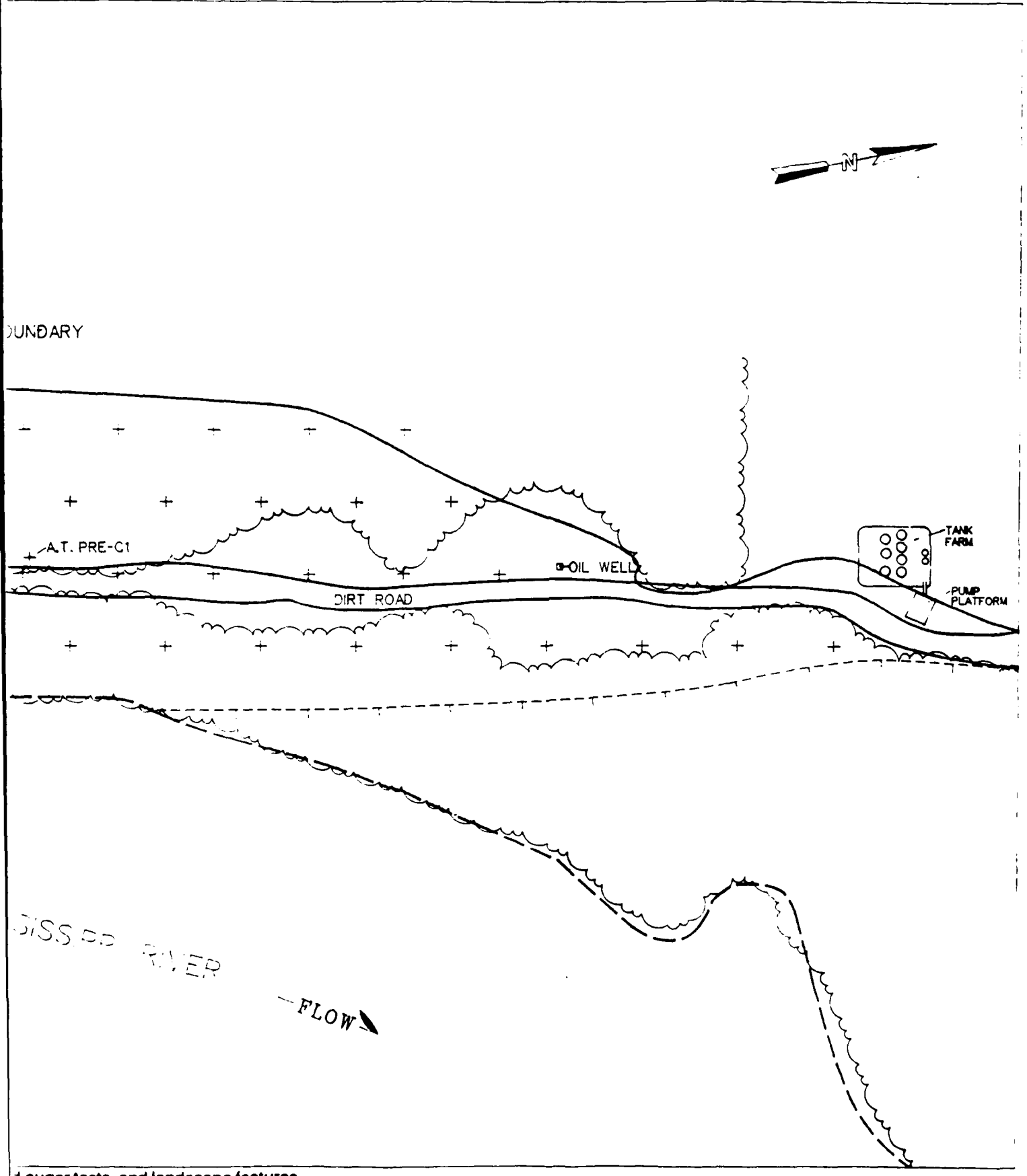

auger tests, and landscape features.

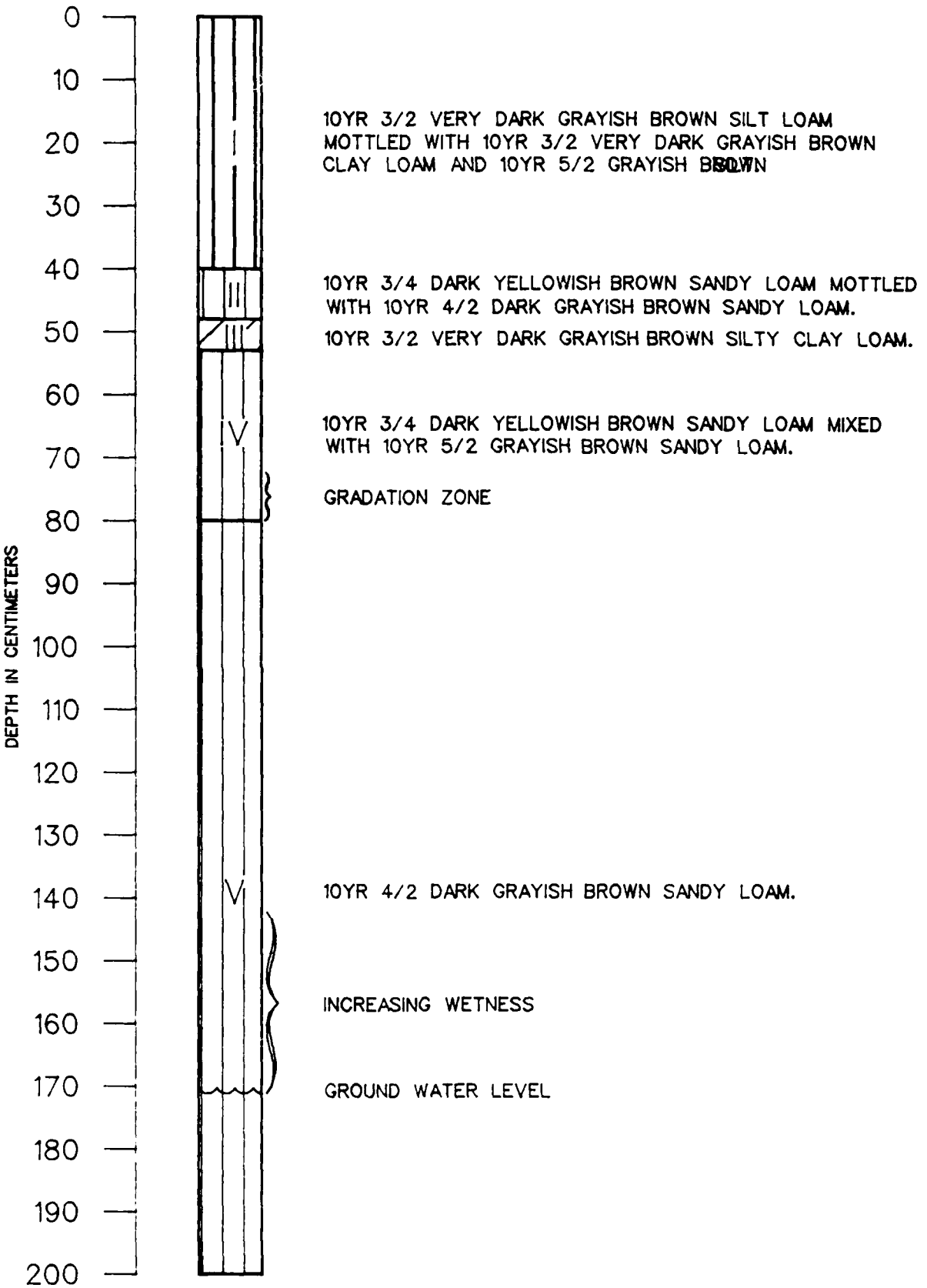

Figure 21. Stratigraphic soil profile of Auger Test Pre-C1, within the Coochie Revetment project item.

Mississippi - Louisiana topographic quadrangle, the downriver portion of the project item lies within the 1824 Mississippi River meander line and east of the recorded land claims. Nineteenth century riverine meandering extended the batture eastward, forming this portion of the project item. By the early twentieth century, the area approximated the Mississippi River bankline. Therefore, deposits in this area can only date from the late nineteenth and twentieth centuries. To date, no substantive historic utilization of this area has been identified.

The upriver portion of the Coochie Revetment project incorporates the northern 1,026 m (3,366 ft) of the project area (Figure 3). It is distinguished from the downriver portion of the project item by a fairly rapid 3 to 4 m (10 to 13 ft) decline in elevation. This slope extends almost due north from the current river alignment, which flows from the northeast. This drop off represents the former bankline of the Mississippi River. The 1967 USGS 15' series Artonish, Mississippi - Louisiana topographic quadrangle notes that this bankline marks the 1918 Mississippi River west bank meander line. That alignment also is depicted on the 1913 - 1915 *Survey of the Mississippi River Made under the direction of the Mississippi River Commission*, Chart 60 B. During initial reconnaissance of the project item, most of the ca. 1918 river channel area was inundated. That portion located adjacent to the Mississippi River was somewhat higher and dry, reflecting the deposition of modern natural levee deposits that align the Mississippi River within the former channel. Because of the recency of the alluvial deposits within the former channel area, no potentially significant cultural resources (with the exception of submerged vessels) should occur within this portion of the Coochie Revetment project item. Auger tests were not excavated within the relatively modern channel fill.

Finally, the previously constructed portion of the Coochie Revetment extends between River Miles 318.3 - 315.6-R, with the downriver end located approximately 1.3 km (0.8 mi) upriver from the Old River Control Structure inflow channel. Geomorphological information, including the overlay of historic maps (Figure 7) clearly indicates that all of the existing revetment area located upriver from the vicinity of River Mile 316.6-R is comprised of mid to late nineteenth century batture deposits similar to those encountered within the project item. The geomorphic age of that portion of the Coochie Revetment located downriver from River Mile 316.6-R, in Sections 59, 60, and 61, Township 2N, Range 8E, is less clear. While Fisk (1944) suggests the deposits may be prehistoric, the pronounced ridge and swale topography that extends in a concave band on the batture from Section 59, downriver to Section 10, Township 1N, Range 9E, indicates that the area lies within a former channel of unknown age. The historic documents did not illustrate any substantive utilization of this area, and no known structures were built in the area. The area's historic confinement to the batture and its modern topography suggest any historic deposits would be covered with considerable amounts of modern alluvium. The underlying deposits may be prehistoric or early historic. If future revetment construction occurs in that area, historic and archeological research should be undertaken in the downriver portion of the Coochie Revetment where previously undisturbed portions of the area could be impacted by construction activity.

Field Methods

Data collected during the field reconnaissance, along with recovered geomorphological data (Chapter II), indicate that the Coochie Revetment project contains two geomorphic land forms. The upriver 1,026 m (3,366 ft) of the project item lies within an early twentieth century meander scar of the Mississippi River. The area is low-lying and typically remains wet. Because of the recency of the deposits, no archeological testing was conducted in this area.

The downriver (approximately 550 m) portion of the Coochie Revetment project contains batture deposits dating between the 1820s and the late nineteenth century. Collected historical and cartographic data indicate the area was not used intensively until late twentieth century petroleum wells and storage facilities were constructed. Systematic auger testing was conducted throughout this downriver portion of

the project item since the land formation appeared to be at least 100 years old. However, no substantive archeological resources were anticipated within this area.

Since modern alluvial deposits overlie much of the Coochie Revetment project, archeological testing consisted of the systematic excavation of auger tests across the area. A total of four survey transects, Transects 1 through 4, were established at 30 m (98 ft) intervals throughout the project area. Auger tests were placed at 40 m (131 ft) intervals along each transect. Auger tests in adjacent transects were offset to maximize survey coverage. Each auger test was excavated with a 2½-inch diameter Dutch auger to a depth of 2 m (6.6 ft) below surface. Observed soil strata were recorded using Munsell Soil Color Charts and standard soil texture nomenclature. Excavated soils then were examined for evidence of cultural deposits. All auger tests were backfilled immediately upon completion of the archeological recordation process. Finally, pedestrian survey was conducted to identify any evidence of cultural deposits eroding into the Mississippi River.

Results of the Field Investigations

Survey of the Coochie Revetment project item consisted of the systematic excavation of 52, 2 m (7 ft) deep auger tests within that portion of the project item located downriver from the ca. 1918 meander scar. These auger tests exhibited a wide variety of stratigraphic sequences, with soil textures primarily including clays, clay loams, silts, and fine sands. Transect 3, Auger Test 13 exhibited a typical auger test profile; it contained five strata (Figure 22). Stratum I consisted of 30 cm (11.8 in) of 10YR 5/3 brown fine sand mixed with 10YR 5/6 dark yellowish brown fine sand and 10YR 7/4 very pale brown fine sand. It rested on the 18 cm (7.1 in) thick Stratum II, a 10YR 6/6 brownish yellow fine sand mixed with 10YR 5/3 brown fine sand and 7.5YR 5/6 strong brown fine sand. Between 48 and 83 cmbs (18.9 and 32.7 inbs), the auger test contained Stratum III, a 10YR 3/4 dark yellowish brown fine sand mixed with 10YR 5/1 gray fine sand, 10YR 6/4 light yellowish brown fine sand, and 10YR 6/3 very pale brown fine sand banded with 10YR 4/1 dark gray clay. Stratum IV extended from 83 to 145 cmbs (32.7 and 57.1 inbs). It contained 10YR 5/3 brown sandy clay mixed with 10YR 4/6 dark yellowish brown sandy clay, lightly mottled with 10YR 7/4 very pale brown fine sand, with thin bands of 7.5YR 5/6 strong brown fine sand. Wetness within the stratum increased with depth, and by 120 cmbs (47.2 inbs), Stratum IV was saturated. The final excavated stratum within the auger test, Stratum V, consisted of 10YR 4/1 dark gray sand mixed with 10YR 4/4 dark yellowish brown sand; the entire stratum was saturated. No artifacts or evidence of cultural material was observed within the auger test.

Transect 4, Auger Test 8 also contained five strata (Figure 23). Stratum I formed a 10 cm (3.9 in) thick deposit of 10YR 3/1 very dark gray clay mottled with 10YR 5/3 brown clay. It rested on the 4 cm (1.6 in) thick layer of 10YR 4/3 dark brown sandy clay mixed with 10YR 4/6 dark yellowish brown sandy clay and 10YR 7/4 very pale brown sandy clay. Stratum III extended from 14 to 97 cmbs (5.5 to 38.2 inbs); it contained 10YR 4/2 dark grayish brown clay loam mixed with 10YR 4/6 dark yellowish brown clay loam, lightly mottled with 7.5YR 5/6 strong brown clay loam. The underlying Stratum IV, at 97 to 142 cmbs (38.2 to 55.9 inbs), consisted of 10YR 5/2 grayish brown sandy clay mixed with 10YR 4/6 dark yellowish brown sandy clay and 10YR 5/1 gray sandy clay. Stratum V, the final excavated stratum, extended from 142 to 205 cmbs (55.9 to 80.7 inbs). This stratum contained 10YR 3/3 dark brown sandy clay; the entire stratum was saturated. As with Transect 3, Auger Test 13, no cultural materials were recovered from within the auger test fill.

Data collected from the auger tests placed within the downriver portion of the Coochie Revetment project item indicate that the entire area is comprised of modern alluvial deposits. Geomorphic and cartographic data support this interpretation. The entire survey portion of the Coochie Revetment project item corresponds to area occupied by the Mississippi River during the early nineteenth century; it was not until the mid to late nineteenth century that the batture developed within the area (Figure 5). Following its

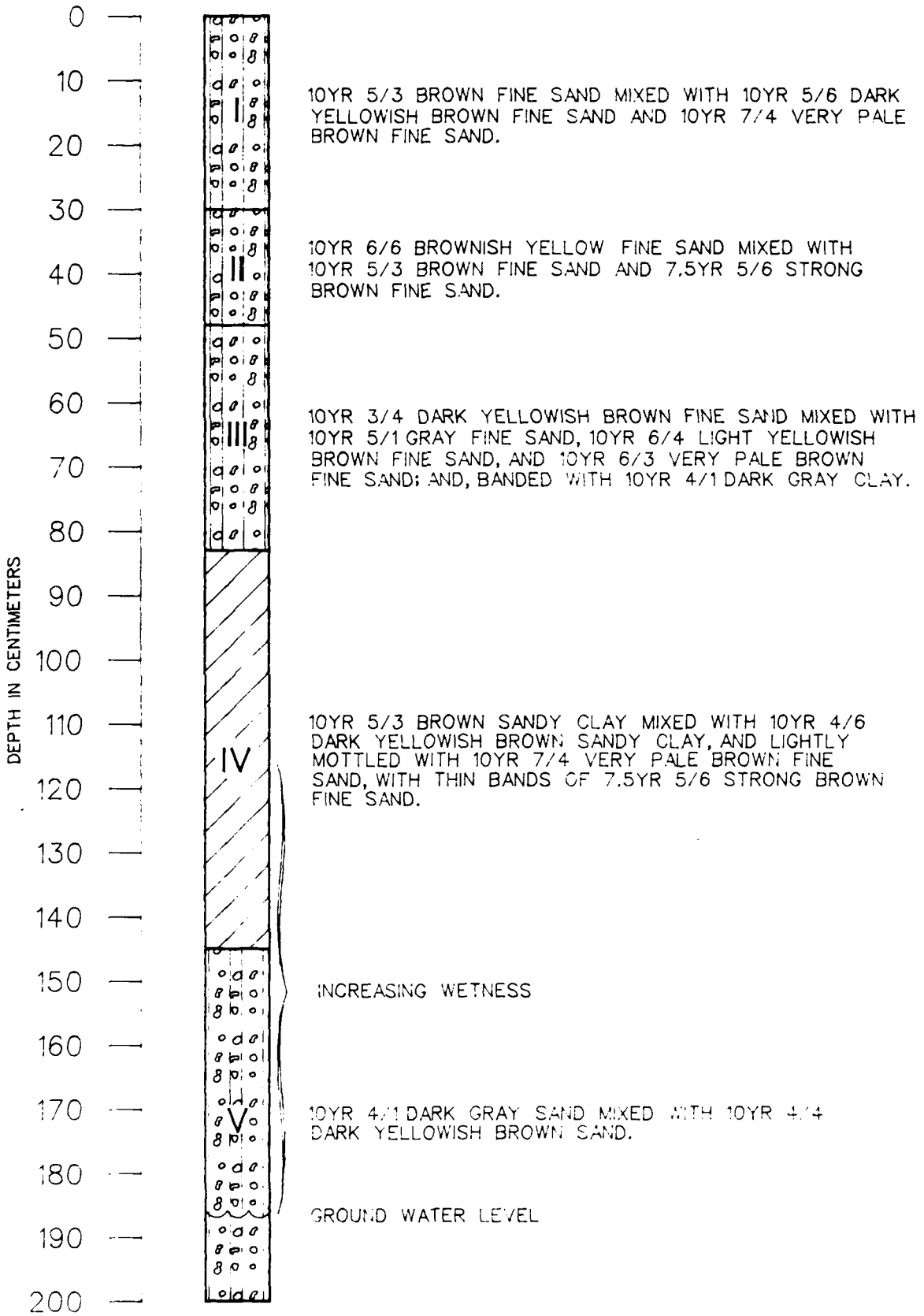

Figure 22. Stratigraphic soil profile of Transect 3, Auger Test 13, within the Coochie Revetment project item.

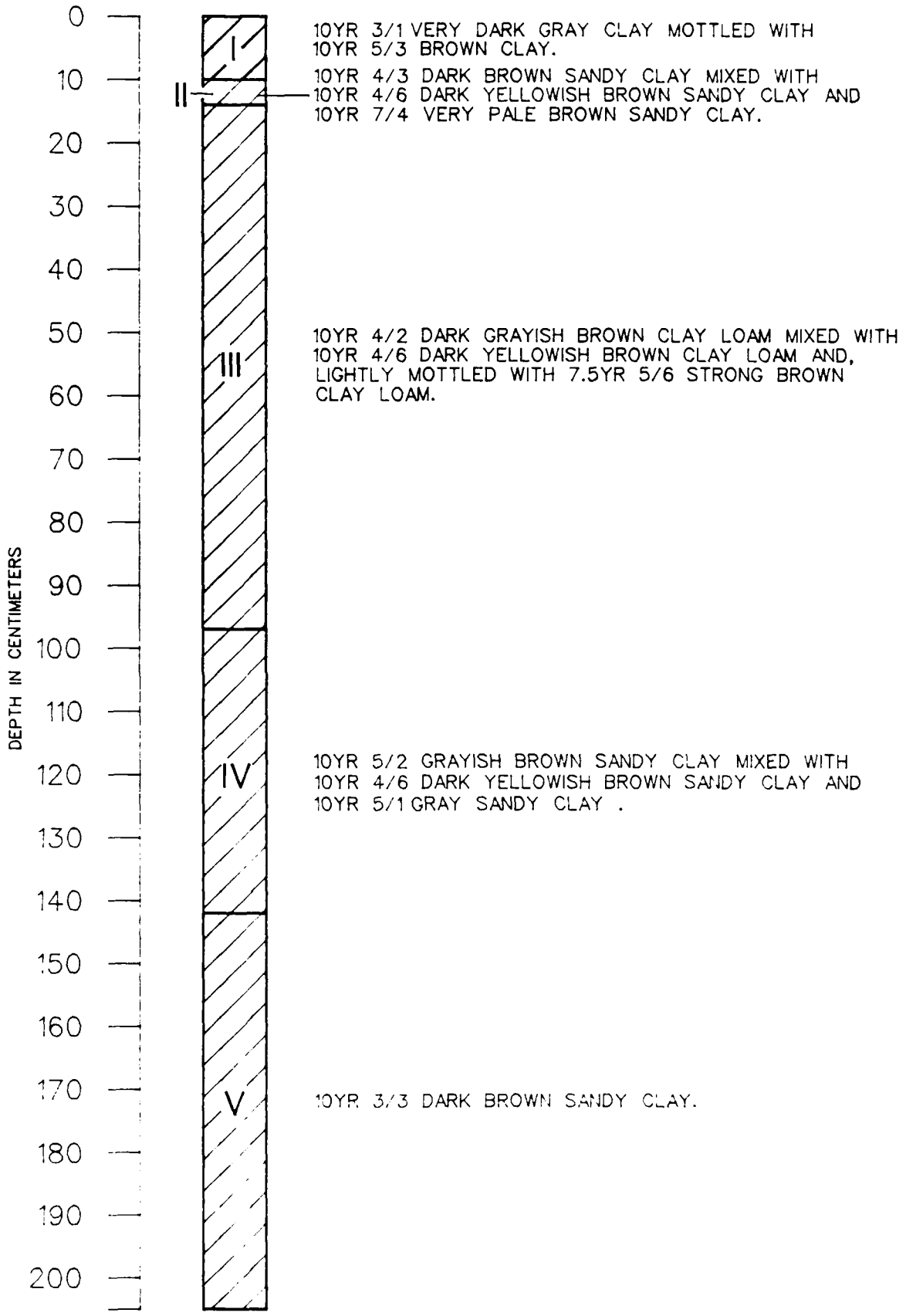

Figure 23. Stratigraphic soil profile of Transect 4, Auger Test 8, within the Coochie Revetment project item.

deposition, the area always has formed part of the batture. In addition, no historic landings or other substantive historic uses of the area are known. During survey, no evidence of prehistoric or historic archeological deposits was observed.

Summary and Recommendations

Prior to field survey, a preliminary reconnaissance was conducted within both the Palmetto and Coochie Revetment project items. Reconnaissance within the Palmetto Revetment project area demonstrated that the upriver 2,270 m (7,450 ft) contained post ca. 1918 deposits; because of the recency of these deposits, only a single auger test (Figure 19) was placed within them. The downriver 565 m (1,850 ft) of the item, however, contained apparent prehistoric deposits (Figures 1 and 6). These downriver deposits were tested for archeological resources through the systematic excavation of 102 shovel tests. Only two of these shovel tests were positive. One contained a single fragment of light green machine-made, modern soda bottle glass, while the other contained a few small brick fragments. A few scattered brick fragments also were observed in a washout. The brick may have been associated with the destroyed Klenstra Landing and its commissary, which apparently were lost to the Mississippi River (James H. Swinny, personal communication 1992). Since no substantive archeological deposits were located during pedestrian survey and shovel testing of the project item, no additional archeological testing of the area is recommended.

Preliminary reconnaissance of the Coochie Revetment project item demonstrated that the 1,026 m (3,366 ft) upriver portion of the project item fell within the ca. 1918 meander scar. Because of the recency of these deposits, no testing was conducted in that area. The 550 m (1,804 ft) downriver portion of the item encompassed a mid to late nineteenth century landform. That downriver area was tested for archeological resources through the systematic excavation of 52 auger tests. No evidence of archeological deposits was located in any of the auger tests, or during pedestrian survey of the bankline. Since no potentially significant cultural deposits were located in the project area, no additional archeological investigations are recommended.

Pedestrian survey augmented by the systematic excavation of both shovel and auger tests failed to identify significant cultural deposits with the proposed project area. No additional archeological investigations of the Palmetto and Coochie Revetment projects are recommended.

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MAPS

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PERSONAL COMMUNICATIONS

Whitney Autin, 1991

William Lucky, April 3, 1992.

Bill Martin, April 3, 1992.

James H. Swinny, 1992.

APPENDIX I

SCOPE OF SERVICES

CELMNPD-RA 9 January 1992

SCOPE OF SERVICES
CONTRACT DACW29-90-D-0018

CULTURAL RESOURCES SURVEY OF PALMETTO AND COOCHIE REVETMENTS, MISSISSIPPI RIVER M-326 TO 315

1. **Introduction**. This delivery order calls for a cultural resource investigation of two revetment reaches on the Mississippi River between Miles 326 and 315, in Adams and Wilkinson Counties, Mississippi and Concordia Parish, Louisiana (Enclosure 1, Hydrographic Survey **1983-1985**, Charts 109, 1, 2, 3). This project reach combines the construction rights of way of Palmetto (Enclosure 2, File No. 1-172, Charts 2 and 3) and Coochie Revetments. The work requires a literature search specific to the entire project reach (Miles 326 to 315), survey of approximately 2.1 miles within the reach, inventory and assessment of the significance of all sites and structures within survey areas, and preparation of comprehensive draft and final reports of investigation for the study. The contract period for this delivery order is **246** days.

2. **Project Context**. This delivery order is one element of a much larger study of impacts to cultural resources on the Mississippi River natural levee. The study has undergone three recognizable stages of data collection since its start in 1976. The specialized nature of the survey environment heavily influences data collection strategies. The batture is a microzone of the natural levee, artificially segregated by man-made levees. It absorbs exaggerated alluviation once distributed across the natural levee into the backswamp. It is constantly reshaped by bank caving, highwater scour, point bar accretion, crevasses, hurricanes, and point specific scour from vessel and barge docking, and public and private construction. The character of the batture also varies with the specific channel reach. Within this study reach, levees were constructed on the west bank of the river, affecting overbank flooding in the Coochie reach, but were not constructed on the east bank in the Palmetto reach.

In response to this environment, the most effective archeological method used to date integrates three key tools: the direct historical method for forecasting the presence or absence of sites (employing historic maps and detailed courthouse record searches); application of historic maps and the principles of fluvial geomorphology to trace channel movement over time; and application of deep testing methods (augering and trench excavation) during the survey phase . The study has collected data on nineteenth century levee building, the sugar and rice industries, wharves and landings, boatyards, the distribution of both large and small landholders from the eighteenth century to the present, and data on impacts to sites. Project schedules control selection of survey reaches, which usually include multiple construction items and require consideration of future maintenance construction. The emphasis is upon comprehensive archeology in the reach rather than on clearing a specific project. Each new investigation not only adds to the growing data base of prehistoric and historic site information but also has the potential to refine future work through improved field methods and more specific background sources.

3. Description of the Study Area. The study reach (M-326 to 315) includes both banks of the river and extends from the vicinity of the Homochitto Cutoff (1776) to just upstream of the Old River Control Structure. Archeologically, the reach is complicated by pronounced meandering and point bar deposition. Older land surfaces were settled by the nineteenth

century and multiple wrecks are recorded in the reach, particularly in the vicinity of Black Hawk Point.

4. Description of the Construction Project. The Palmetto and Coochie Revetment construction easements to be assessed are extensions of earlier revetment segments (Table 1). Both reaches will be stabilized with a continuous articulated concrete mattress which is mechanically laid from the Low Water Reference Plane (LWRP) to a point several hundred feet into the river channel. To prepare for revetting, a 200 foot wide corridor adjacent to the bankline will be cleared of all vegetation and graded to a standard slope. Slope grading will remove the upper bankline within a 100 foot wide corridor adjacent to the edge of bank. The grading distance will vary in areas where caving has occurred. Any cultural resource within 200 horizontal feet of the bankline and within 10 vertical feet of the ground surface has a high potential for being destroyed. Surficial resources further than 200 feet from the bankline may be subject to disturbance from the movement of heavy equipment, but buried sites will remain intact.

5. Study Requirements. The work to be performed by the Contractor will be divided into three phases: Literature Search and Records Review; Intensive Survey and Site Assessment; and Data Analysis and Report Preparation.

a. Phase 1: Literature Search and Records Review. The Contractor shall commence, upon work item award, with a literature, map, and records review specific to the project reach (M-326 to 315). While some general information on a county or parish, state and national level may be required to explain cultural, economic and environmental trends active in the project reach, this report will focus on the history of human use of the entire project reach up to the present time. The goals of this review are five-fold and all five are of equal importance. First, this review will identify all existing, former and probable sites within the reach. Second, this review will collect and interpret site formation and destruction information (settlement, landuse, and land disturbance data) in a balanced manner for all periods of occupation including the present. In particular, consider what earlier revetment construction would have destroyed. Third, this review will be sufficiently complete and detailed to allow its application by any project in the vicinity to forecast all sites in the project reach, their history and destruction. Fourth, the results of this review will guide the selection of survey techniques and selection of locations requiring additional work to locate potentially buried sites. Fifth, this review will provide the background context by which the significance of all sites in the reach may be assessed. It will not be acceptable to conduct specific background research only after a site is found.

At a minimum, the literature and records review will establish the distribution of prehistoric and historic sites in the region and their proximity to the study area; identify previously recorded sites, standing structures, National Register of Historic Places properties and National Landmarks in or in close proximity to the project reach; provide national, regional and local context for assessing the historical, architectural and archeological significance of all sites and structures located in the project reach; and predict resources which can be expected to be located within the project reach. Economic and social trends, channel migration, major natural events, and all previous construction affecting land use patterns and the state of preservation of predicted resources will be analyzed and presented in specific terms of the project reach.

This phase shall include but not be limited to review of historic maps, the State Archeologist's site and standing structure files, the National Register of Historic Places, geological and

geomorphological data, archeological reports, ethnohistoric records, historic archives, census records, sugar and rice reports, and Land Office or courthouse records. Interpretation of landuse during any given period should not relay on maps alone, but should incorporate as many relevant sources as possible to prove or disprove an hypothesis. Where archival data can not be found, answers to research questions will be sought through interviews of knowledgeable persons.

Specific questions and issues to address:
1. is there likelihood of finding sites if revetment segments already in place were repaired; if so, specifically where?
2. project the probable locations of wrecks (i.e , in the channel, beneath revetment mat, locked in point bar deposits) in the reach and assess the need for either a terrestrial or an underwater survey of specific locations;
3. document through historic maps and geomorphological sources the sequence of channel movement, point bar deposition and the most probable locations of prehistoric/early historic land surfaces in the reach;
4. the downstream segment of Palmetto Revetment (M-319-L) appears to be fairly recent point bar; analyze the relative age of the land surface and recommend whether survey is necessary;
5. Table 1 limits survey in the Coochie Revetment reach to a short section of nineteenth century bank; analyze channel change in this reach, identify any other segments of probable pre-1880 origin, and discuss with the Technical Representative.

b. Phase 2: Intensive Survey and Site Assessment. The contractor shall complete survey of and site assessment within the upstream Palmetto segment no later than 1 July 1991.

The survey methodology must take overburden into account. An augering regime must be included to compensate for an unknown amount of alluviation, usually not more that 1-2 m in depth. Sample augering first is recommended to judge the amount of overburden in various locations of the survey reach. Shovel testing alone may not be adequate to inventory all sites.

The Technical Representative will be informed ahead of time of the testing schedule of all sites.

All holes will be backfilled.

An intensive survey is a comprehensive, systematic, and detailed physical examination of a project item for the purpose of locating and inventorying all cultural resources within the impact zone. The survey will be performed within the context of an explicit research design, formulated in recognition of all prior investigations in the study area and surrounding region, and will include subsurface testing and evaluation of identified resources against the National Register of Historic Places criteria of significance (36 CFR 60.4). The survey will provide adequate information to seek determinations of eligibility from the Keeper of the National Register, and will innumerate project effects on each resource located within the study area. The evaluation will be conducted utilizing current professional standards and guidelines including, but not limited to :

> the National Park Service's draft standards entitled, "How to Apply the National Register Criteria for Evaluation", dated June 1, 1982;
>
> the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation as published in the Federal Register on September 29, 1983;

Louisiana's Comprehensive Archaeological Plan, dated October 1, 1983;

the Advisory Council on Historic Preservation's Section 106 Update/3 entitled, "Manual of Mitigation Measures (MOMM)", dated October 12, 1982.

The survey shall be an intensive pedestrian investigation augmented by systematic subsurface testing. Maximum transect width will not exceed 20 meters. The Contractor will include sample augering in the investigation methodology to 1) establish the probable depth of former living surfaces and 2) to locate buried sites or cultural strata indicated by literature and map research or to assess the size and significance of sites located in the bankline.

The areas surveyed and all sites located within project boundaries will be recorded (in ink) to scale on the appropriate 7.5 minute quadrangle and aerial mosaic project maps. The quadrangle maps will be used to illustrate site forms (see below). The project maps will be returned to the Technical Representative with 5 days of completion of survey in the upstream Palmetto Revetment reach.

All sites will be sufficiently tested using shovel, auger or other excavation techniques to determine and record site size, depth of deposit, stratigraphy, cultural association, function, approximate date of occupation, condition., and significance. Site boundaries, test excavation units at sites (including test pits, shovel tests, auger intervals, backhoe trenches, etc.) and activity areas will be measured and mapped to scale. All scaled field maps will accurately reference grid locations in terms of levee stations or range markers in close proximity to the illustrated work area. The actual elevation (NGVD) of all subsurface sites, the top of bank, and top and bottom of cultural strata will be determined and mapped.

The Contractor will fill out and file state site forms with the Office of the Louisiana State Archeologist and cite the resulting state-assigned site numbers in all draft and final reports of this investigation. The Contractor will submit updated state site forms to the State Archeologist for all previously discovered sites within the project reach. These forms will correct previously filed information and summarize what is known of each resource as a result of this investigation. One unbound copy of each site or standing structure form will be submitted to the COR with the draft report.

All standing structures located in the survey area will be identified by function, dated and described using standard terminology of formal and/or vernacular architecture, as appropriate to each structure. Each standing structure will be recorded (using a simplified, standardized format selected by the Division of Archaeology and Historic Preservation), accompanied by a minimum of three, clear, black and white photographs showing front, back and side views of the structure. The Contractor will determine whether subsurface features are present. If present, the structure and all features shall be treated as a site, which shall be mapped and recorded on State of Louisiana site forms. The Contractor shall assess the significance of all standing structures using information collected during the survey and literature search phases of this work item.

c. Phase 3: Data Analyses and Report Preparation. All survey and testing data will be analyzed using currently acceptable scientific methods. The Contractor shall catalog all artifacts, samples, specimens, photographs, drawings, etc., utilizing the format currently employed by the Office of the Louisiana State Archeologist. The catalog system will include site and provenience designations.

All literature, map search, field and laboratory data will be integrated to produce a single, graphically illustrated, scientifically acceptable draft report discussing the project reach as a whole. Data integration requires use and application of all data collected to interpret resources, their setting, formation, destruction and significance. All sites located within the reach will be related in text and tabular form to the appropriate construction item(s) for accurate future reference. Project impacts on all cultural resources located and/or tested by this study will be assessed. The Contractor shall provide justification of the rationale used and a detailed explanation of why each resource does or does not meet the National Register significance criteria (36 CFR 60.4). For each resource recommended as eligible to the National Register and assessed to be impacted by construction, the Contractor shall recommend specific mitigation alternatives. Inferential statements and conclusions will be supported by field, map or archival data. It will not be sufficient to make significance recommendations based solely upon assumed site condition, artifact content, or the presence or absence of features.

All data collected will be reported. The final report will fully describe how data were collected. The final report shall include maps of every site showing locations of shovel tests, test units, auger holes, trenches, artifact distributions, activity areas and features. Each map will tie the site shown into a permanent bench mark.

6. Reports.

a. Monthly Progress Reports. One copy of a brief and concise statement of progress shall be submitted each month throughout the duration of the delivery order. These reports, which may be in letter form, should summarize all work performed, information gained, or problems encountered during the preceding month. A concise statement and graphic presentation of the Contractor's assessment of the monthly and cumulative percentage of total work completed by task shall be included each month. The monthly report should also note difficulties, if any, in meeting the contract schedule.

b. Draft and Final Reports (Phases 1,2, and 3). Five copies of a draft report integrating all phases of this investigation will be submitted to the COR for review and comment **191** days after the date of the order.

An estimate of the acreage surveyed for this project will be cited in the report introduction.

The draft and final reports shall include all data and documentation required by 36 CFR 60-63 to prepare requests for Determination of Eligibility to the National Register of Historic Places for those sites recommended by the Contractor as significant. For each significant cultural resource, the Contractor shall recommend appropriate mitigation procedures which are appropriate to the site or structure, its physical setting and condition.

These written reports shall follow the format set forth in MIL-STD-847A with the following exceptions: 1) separate, soft, durable, wrap-around covers will be used instead of self covers; 2) page size shall be 8-1/2 x 11 inches with a 1-1/2-inch binding margin and 1-inch margins on all other edges; 3) the editorial policy and style guide of the Society for American Archaeology (1983) will be applied to the report text, citations and References Cited. Spelling shall be in accordance with the U.S. Government Printing Office Style Manual, dated January 1973.

The body of each report shall include the following: 1) introduction to the study and study area; 2) environmental setting; 3) review and evaluation of previous archeological investigations; 4) distribution of prehistoric and historic settlement in the study area; 5) research design; 6) description of field and laboratory methodology, statement of project objectives, and analysis of

the effectiveness of the methods; 7) data analyses and cultural material inventories; 8) data interpretation; 9) integration of archeological and historical data; 11) conclusion; 12) data recovery recommendations for significant sites or structures; 13) references cited; and 14) appendices, as appropriate.

The transcripts of all interviews will be provided in an appendix as will data and profiles from all borings and/or backhoe trench profiles collected during the field phase of this study. The COR will provide all review comments to the Contractor within 35 days after receipt of the draft reports (**226** days after the date of the order). Upon receipt of the review comments, the Contractor shall incorporate or resolve all comments with the approval of the COR and will submit one reproducible master copy and 40 bound copies of each report of investigation, and all separate appendices to the COR within **246** days after the date of the order.

In order to preclude vandalism, the draft and final reports shall not contain specific locations of archeological sites.

7. Disposal of Records and Artifacts. All records, photographs, artifacts, and other material data recovered under the terms of this delivery order shall be recorded and cataloged in a manner compatible with those systems utilized by the Louisiana SHPO and by State and Federal agencies which store archeological data. They shall be held and maintained by the Contractor until completion of the delivery order. Final disposition of the artifacts and records will be in accord with applicable Federal and State laws. Unless otherwise specified, artifacts will be returned to the landowner or permanently housed with the Louisiana Division of Archaeology and Historic Preservation or in a repository selected by the State Archeologist. The Principal Investigator shall inform the COR in writing when the transfer of data has been completed and shall forward to the COR a catalog of items entered into curation. The location of any notes, photographs or artifacts which are separated from the main collections will also be documented. Presently existing private archeological collections from the project area which are used in data analyses will remain in private ownership. The Contractor shall be responsible for delivery of the analyzed archeological materials to the individual landowners, the Louisiana SHPO's office, or any other repository designated by the Government following acceptance of the final report. All artifacts to be permanently curated will be cleaned , stabilized, labeled, cataloged on typed State curation forms, and placed in sturdy bags and boxes which are labeled with site, excavation unit or survey collection unit provenience.

TABLE 1

REVETMENT ITEM	RIVER MILE RANGES		HYDRO CHART	CNSTR FY	COMMENTS
Palmetto	326.1-324.5-L	U-190 to U-110	109	1992	survey 400 ft wide corridor parallel & adjacent to LWRP*
	324.5-319.2-L	U-110 to D-87	109,1,2	1955 to 1962	constructed; no survey required; assess in lit search
	319.2-318.5-L	D-87 to D-105	2	N/A	point bar accretion; no survey required; assess in lit search
Coochie	319.3-318.3-R	U-100 to U-50	2	1993	survey approx. 319-318.5-R (19th century land surface), same as above; no survey required of recent point bar accretion; assess full reach in lit search
	318.3-315.6-R	U-50 to ?	3	1954 to 1966	constructed; no survey required; assess in lit search

*LWRP refers to Low Water Reference Plane, illustrated on Mississippi River Hydrographic Survey Charts 1983-1985